

**MINOR LEAGUE METROPOLIS: URBAN REDEVELOPMENT  
SURROUNDING MINOR LEAGUE BASEBALL STADIUMS**

A Dissertation  
Presented to  
The Academic Faculty

by

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In Partial Fulfillment  
of the Requirements for the Degree  
Doctor of Philosophy in Public Policy

Georgia State University  
Georgia Institute of Technology  
May 2017

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**Date Approved: March 7th, 2017**

To my parents, who instilled in me a love of baseball by suffering through many an afternoon at the ballpark with a squirming child. And to my wife, Clare, whom I look forward to sharing the same suffering with someday.

## ACKNOWLEDGMENTS

My long journey towards a doctorate has not been taken alone.

First, I would like to thank my dissertation committee for your tireless advice and guidance throughout the arduous process. The rigor and meticulousness you brought to my project has improved my dissertation and future research immensely. Dr. Cathy Liu, thank you for your support and mentoring; I will never forget that I first proposed what eventually became the quantitative analysis in your class my second semester. Dr. Jesse Lecy, I am in your debt for years of advice and guidance, and I look forward to continued opportunities to work together in the future. Dr. Hacker, the daily conversation and occasional beer have helped to keep me sane throughout the journey to finishing the program. Dr. Rogers, your comments, particularly on the foundations of the project, have improved it immeasurably and will continue to shape my approach to future research questions. And Dr. Esnard, you joined the committee in a moment of crises and I will always be thankful for that, but your comments throughout the research were irreplaceable.

Graduating would have been impossible without the love and support of my family. I would like to thank my wife, who (then my girlfriend) moved across the country to help me pursue my goal. I could not have survived the program without you, and I look forward to the bright future we have built together. To my parents, thank you for your support and encouragement as I took an uncertain leap. Emily, your sarcastic support (and love) has been invaluable; I am so very glad to have you as a sister and a

friend. And to my brother, who beat me to this accomplishment by over a decade in a much more difficult field; you have provided a wonderful example of intellectual inquiry.

I would like to thank the many friends that have helped me to overcome the multitude of challenges involved in earning this degree. Sandy Zook, Chris Wyczalkowski, Rahul Pathak, Bryce Farbstein, Mahmoud Elsayed, Sherman Cooper, Xi Huang, Chris King, and Obed Pasha, I could not have endured through the first classes let alone comps without you all by my side. Here's to the many years of continued intellectual growth and exchange we have ahead. And to all those I have worked with as part of the LEAD program across the years, I thank you for the time we spent together. I'd like to offer a special thanks to Wes Wynens, Jeff Davis, Alison Southern, and Stacey Doremus for their management of the programs through its tremendous and well deserved growth; I know the sky is the limit. Any list of names of those I have spent time with as part of LEAD will be incomplete, but thank you to Camille Barchers, Ross Beppler, Simone Johnson, Janille Smith-Colin, Hommood Alrowais, Courtney Di Vittorio, Newton Chan, Rylan Wolfe and the many more individuals with whom I have shared the program. The hours we spent together were often the most enlightening and enjoyable part of my week.

I would like to acknowledge and thank Georgia State University for the funding of my dissertation through the Andrew Young School Dissertation Fellowship and the Georgia State University Dissertation Grant. In addition, I have received funding for the project from the Mercatus Center, both in the form of a research grant and the Visiting Dissertation Fellowship for the 2016-17 academic year. The Mercatus Center has provided financial and intellectual support to me throughout my graduate studies, and I

would like to particularly extend my thanks to Erica Celler, Stefanie Haeffele-Balch, and Bethany Stalter for your assistance, generosity, and friendship over the years.

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## **SUMMARY**

Special Activity Generators have been a policy popular with governments across the country seeking to revitalize lethargic downtowns. Sports facilities, a widespread form of Special Activity Generators, have been shown to be incapable of generating regional economic benefits, but are able to generate urban redevelopment. While sports facilities are well studied by academics, minor league stadiums have not been the focus of significant research despite the larger number of such projects.

My dissertation uses a sequential explanatory mixed methodology to answer whether minor league baseball stadiums are successful as Special Activity Generators. I first use a quantitative analysis of sixteen stadiums built around the year 2000 which finds a significant effect of the stadium on nearby neighborhoods in comparison to the rest of the city. However, that growth is created by concentrating redevelopment, not creating unique activity. Two case studies clarify that the stadiums were critical to the observed redevelopment efforts, but also that there is a need for thorough planning and collocated amenities prior to construction in order to maximize the results from the public investment.

# CHAPTER 1

## INTRODUCTION

Major league sports facilities have been a central focus of urban scholars for the past three decades but the arenas and stadiums of the minor leagues have received far less attention. The most significant research on the topic was Arthur Johnson's (1995) *Minor League Baseball and Local Economic Development*, which coincided with the growth in minor league stadium construction in the early 1990s but was unable to observe its long-term effects. Since its publication in 1995, eighty-three<sup>1</sup> minor league baseball stadiums have been built in the United States at ever escalating costs, with several more projected to open in the next few years.

My dissertation extends the understanding of sports stadiums and urban redevelopment into the nebulous frontiers of minor league baseball, where new leagues arise regularly and teams fold and relocate yearly. I situate the relationship between minor league baseball and their host cities within Robertson's (1995) framework for Special Activity Generators (SAGs). SAGs are meant to add vitality to a blighted area and encourage increased activity and ancillary construction, making them a popular redevelopment tool; Robertson outlines three principle purposes for SAGS, which I proxy for in order to evaluate whether minor league baseball stadiums succeed in their long-term goal of urban revitalization.

I use a sequential explanatory mixed methodology to answer whether minor league baseball stadiums are successful as Special Activity Generators. I first address the

<sup>1</sup> Through 2016, and that is only considering stadiums built for teams playing in Low-A or higher levels of competition; Appendix A contains a discussion of the different levels of minor league competition.

question quantitatively with a large sample to understand whether a generalized pattern of stadium effects can be detected. Specifically, I use census data at the tract level to analyze how the areas where stadiums are located differ from the rest of their city in order to assess whether they are in fact being placed in areas of blight. In addition, I evaluate the effects of minor league baseball stadiums one decade later on adjacent communities on median home prices, median incomes, new housing construction, population, and residential vacancy rates.

With the generalized effects of stadiums on urban redevelopment established, I conduct case studies of two cities. In particular, the case studies allow me to validate findings from the quantitative analysis, and to reanalyze the question using more localized data, including from the Economic Census. For two cities I again answer where stadiums locate along with their effects one decade later on surrounding census tracts. In addition, I assess how significant a role the stadium played in the results derived in the quantitative analysis.

In this chapter, I discuss the history of government involvement in city development and the theoretical framework used in the analysis. In addition, I introduce minor league baseball and the stadiums they play in, with a particular focus on differentiating minor and major league sport.

### **1.1 Urban Context.**

In the United States, inner cities declined sharply in the mid-20<sup>th</sup> century as the twin forces of deindustrialization and suburbanization took hold. Deindustrialization removed cities' central role as the locus of production and shipping, as well as reduced the employment opportunities for their residents (Koritz, 1991). Suburbanization

occurred throughout the century prior, but accelerated during the 1960s, partially as a result of transportation technologies, but also in reaction to the civil rights movement, school desegregation, and changes in racial composition after the Great Migration (Mieszkowski & Mills, 1993; Mills & Price, 1984). Bereft of middle class tax payers, cities declined further during the 1970's, as violent crime increased, public schools deteriorated, and housing prices plunged (Cutler, Glaeser, & Vigdor, 1997).

After a period of decline set in, governments in central cities began a series of policies in the 1960s to encourage the middle-class to return. Urban revitalization programs cleared whole sections of cities to remove blight in an attempt to eliminate perceived decay (Vale, 2013). Public transportation, waterfront promenades, tourist districts, and shopping malls have all been supported by government as reactions to deteriorating downtowns, though few of these projects have strengthened cities economies (Glaeser, 2011; Robertson, 1995).

While governments have financed numerous types of building projects, few have attracted the public attention of sports stadiums. Prior to the 1950's, stadiums were primarily financed privately but as professional teams realized that threats of relocation could secure new stadiums, governments found themselves involved in ever more costly projects. Initially, public contributions to stadiums were primarily defended by supporters on the basis of projected growth in regional income and jobs, but academics have consistently and thoroughly demonstrated those claims to be false (Coates & Humphreys, 2008). Though economic development arguments have not been completely absent in recent public debates, since the 1990s urban redevelopment surrounding stadiums has become a prominent justification for public financing going to the projects. Regardless of

the motive, between 1950 and 2005, governments spent over \$7 billion on sports facilities collectively for teams in the MLB, NFL, NBA, and NHL (Long, 2005).

In the first half of the 20<sup>th</sup> century, stadiums were often built on the outskirts of cities because owners were concerned with finding cheap land to develop when relying on their own private funds (T. Chapin, 1999).<sup>2</sup> As governments came to finance portions of stadiums, public officials began insisting in many cases that they be located not at the urban fringe but inside the city<sup>3</sup>, typically within struggling downtowns. Locating a sports facility in a city's downtown provides an impetus for additional development in the area, which officials argue will stimulate the districts growth. Attracted by the new anchor tenant and the implicit commitment of the government to the neighborhood, stadiums and arenas have helped mobilize the investment of private capital into an area (Chapin, 2004). These acts of collateral development, be they retail, restaurants, or residential, help transform downtowns into lively neighborhoods.

Downtowns carried a heavily negative connotation into the 1980s and 1990s, but sporting events attract individuals to the area that otherwise would not visit and helped to alleviate concerns about safety (Johnson, Glover, & Stewart, 2014). In addition, sports facilities add variety to the hours that downtowns are utilized, shifting the area from a 9-5 schedule towards use at all hours (Johnson, 1991). The project creates a major public center of activity, hosting other events, such as concerts and local amateur sports, benefitting and attracting residents uninterested in professional sports.

Beyond urban redevelopment, cities and governments have other reasons for their

<sup>2</sup> Antique stadiums such as Wrigley and Fenway, within their cities in modern time, were built on the fringe of cities and development has since surrounded them (Gershman, 1995).

<sup>3</sup> If not located within the city, stadiums are typically located in suburban areas within new build sites with hotels, restaurants, and retail. These sites have a distinct logic from downtown stadiums.

willingness to help build sports stadiums. For the government officials involved it gives the appearance of success, and with the struggling economies of cities during the second half of the 20<sup>th</sup> century, demonstrating positive action was necessary (Blakely & Leigh, 2013; Johnson, 1995). In the public's mind cities and officials that are able to manage the development of a stadium appear to be more capable than those that fail to do so (Euchner, 1994). Within each league, there are a limited number of teams available and every city desires their own franchise in order to boost civic pride and set the city itself apart. Cities of all sizes have demonstrated a willingness to give public dollars to sports facilities, even those far too small to attract major league franchises. Luckily for them, there are a range of teams and leagues available to fit any city's price range.

## **1.2 What is Minor League Baseball?**

While major league sports have been the focus of most public and academic debates about the wisdom of building sports stadiums, minor league baseball has established itself as an alternative in cities lacking the finances or population to host a major league franchise. Minor league sports refers to teams and leagues outside of the “Big Four” North American sports, which are Major League Baseball (MLB), the National Football League (NFL), the National Basketball Association (NBA), and the National Hockey League (NHL).<sup>4</sup> The term ‘minor league baseball’ encompasses organized professional baseball throughout the United States within the official hierarchy of Minor League Baseball (MiLB) as well as professional teams and leagues that operate independently. Throughout my dissertation, the term ‘minor league baseball’ will refer to all leagues collectively, while I will use ‘MiLB’ to refer specifically to those affiliated

<sup>4</sup> Major League Soccer (MLS) still trails the Big Four Sports in total and television revenue considerably. Its rapid growth has been impressive, but it has not transformed the Big Four into the Big Five yet.

with Major League Baseball.

Teams in MiLB are owned independently, but are all affiliated with an organization in Major League Baseball that owns the contracts for players and makes decisions about where each player plays. MiLB are developmental leagues, which means that their primary purpose is to improve and mature players that are too inexperienced to play the sport at the highest level. Teams in MiLB compete in a range of leagues designated based on the level of competition, from Rookie League that is for the most recent draft picks, up to Triple-A, the highest and most professional quality league. I more fully explain the different leagues and levels of competition in Appendix A.

Independent leagues play throughout the country and have quality comparable to MiLB, but have a high failure rate and generally feature players who were undrafted out of college, failed in MLB's minor leagues, or are aging former stars. The leagues in MiLB largely started as independent entities or competitors to Major League Baseball but were eventually incorporated into its hierarchy and control.<sup>5</sup> As of the 2015 seasons, there are four established independent leagues playing in the United States in addition to the twenty of MiLB.

Minor league baseball is more family friendly than its counterparts at the major league level, in part because owners cannot rely on talented teams to draw fans to the ballpark since the quality of play is inferior and the players more transient. The owners of minor league teams focus on making games accessible to casual fans, pairing affordable

<sup>5</sup> In the 1920's all minor league teams were independently owned and MLB teams would purchase the rights to players from the owner of the team they played for. Branch Rickey, then with the St. Louis Cardinals, began investing in minor league teams to circumvent negotiating over purchasing players. The 'farm system' made the 1930's Cardinals a powerhouse, and eventually other teams began adopting a similar tactic, and eventually the modern system developed where teams are affiliated with one parent club.



costs with promotions and events within the game (Bernthal & Graham, 2003; Cebula, Toma, & Carmichael, 2009). The fact that the players are paid considerably less than those in Major League Baseball,<sup>6</sup> have small odds of ever playing at the games highest level, still ride buses to away games, and play far from the lights of big cities has created the illusion that they ‘play for the love of the game’. Numerous books have been written about life in the minors, as authors search for *the soul of America* in a minor league ballpark.<sup>7</sup>

The stadiums used by minor league baseball teams are an order of magnitude less expensive than those in the sports highest levels. For instance, the five MLB stadiums opened since 2008 have a total average cost of \$692 million, while the last five stadiums built at the highest level of the minor leagues averaged \$59 million; stadiums for the lower levels of MiLB cost still less.

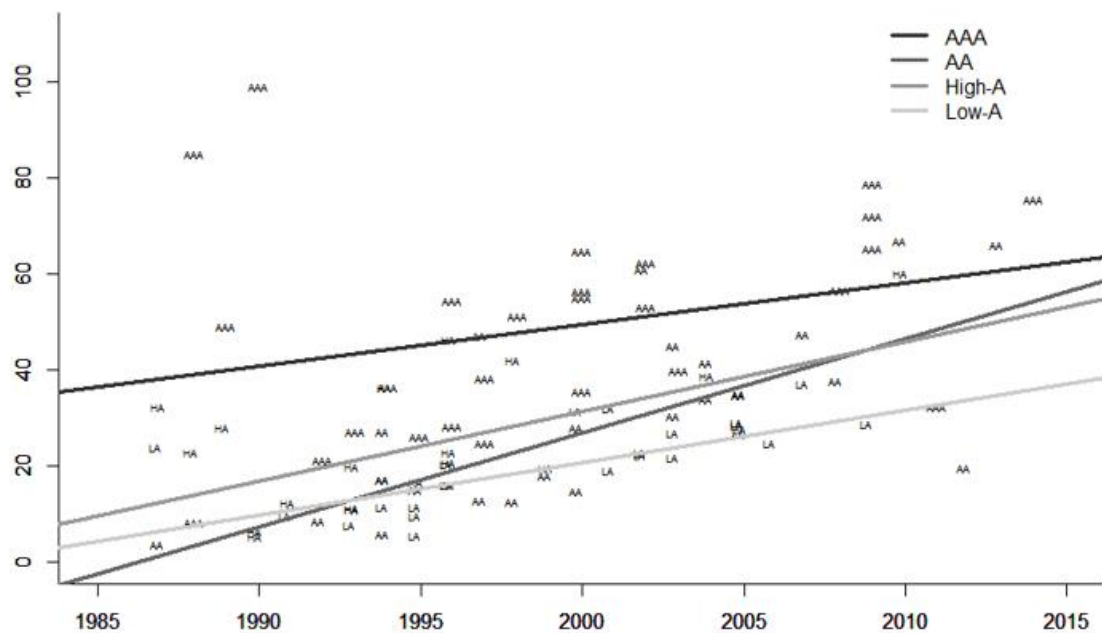
Despite the humble facilities in comparison to major league franchises, the costs of minor league stadiums have increased steadily over time. Figure 1.1 displays the total spending on new stadiums that have been built since the late 1980s for MiLB teams at the Triple-A, Double-A, High-A, and Low-A levels.<sup>8</sup> Each individual stadium’s costs is

<sup>6</sup> Minor Leaguers monthly pay (during the season) starts at a bit over \$1000, and rarely goes above \$2500. However, high drafts picks can received large bonuses ranging about \$1 million, although most players receive far less.

<sup>7</sup> For example, at the beginning of *Stolen Season*, before setting out on a cross-country road trip, the author David Lamb (2014) admits he “had never even been to a minor league game, but [he] knew the marriage was perfect: America and the minor leagues, each a metaphor for the other.” (p. x). Other recent books in the genre include *Class A: Baseball in the Middle of Everywhere* by Lucas Mann (2013) and *Where Nobody Knows Your Name* by John Feinstein (2014).

<sup>8</sup> Data on stadium construction costs from The Sports Facilities Report published online by Marquette’s Law School. Marquette publishes The Sports Facilities Report annually with articles and features related to sports economics as well as information about teams, facilities, revenues, lease agreements, and more. The reports have been published since 2000 with information on the Big Four Major Leagues, but only in 2005 did they add information and data about minor league baseball stadiums . The Sports Facilities Report only contains information for teams that play at or above Single-A leagues of MiLB, excluding teams playing in Short-Season A and Rookie Leagues of MiLB as well as independent leagues. Figures for the costs of stadium construction are uneven in the Sports Facilities Report, as only 76 are available of the 136 MiLB

indicated by a point in the scatterplot, but attention should focus on the trend lines showing the steady increase in prices even when adjusting for inflation. The lower levels of Minor League Baseball have increased the most rapidly and the costs of Double-A stadiums are beginning to approach those of the Triple-A.



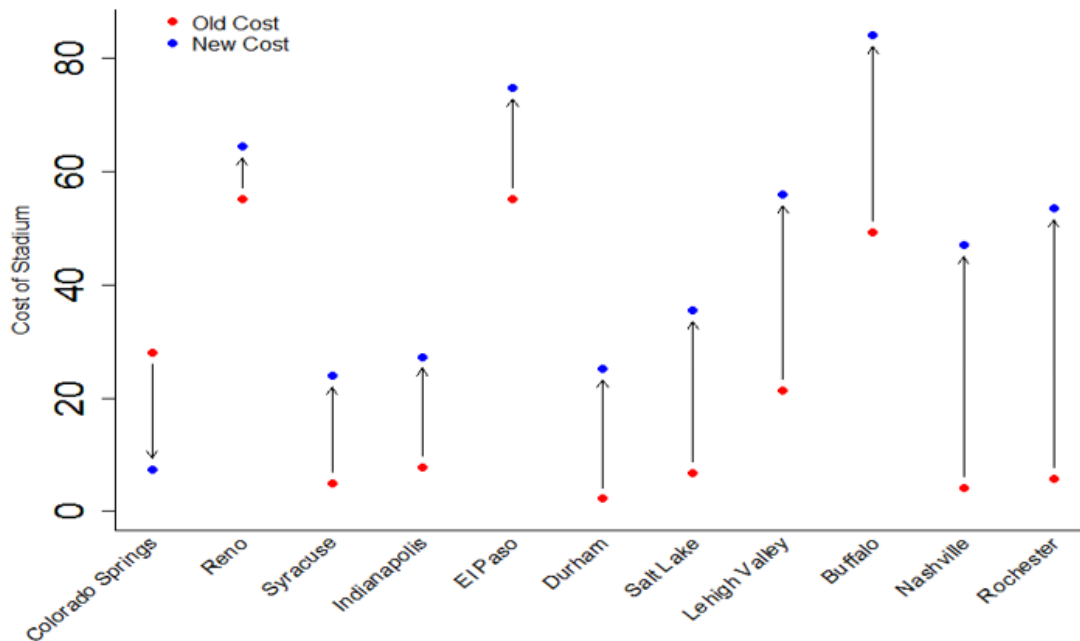
**Figure 1.1 Stadium Spending by League**

The increase in spending on stadiums can also be characterized by looking directly at the cost of replacement stadiums when teams relocate or otherwise receive a new facility.<sup>9</sup> Figure 1.2 displays the cost of the old and new stadium for the 11 Triple-A teams that have opened new ballparks since the year 2000. In only one case has a stadium

teams included; however, the report is by far the most comprehensive source for MILB stadium financing information presently available. The available data was supplemented by manual web searches of local newspapers in each host city to ascertain an estimate of the total costs.

<sup>9</sup> Data for replacement stadium costs are as described in the previous footnote. For the stadiums that were replaced costs were generated by web searches of local newspapers for each city.

cost less than what it replaced.<sup>10</sup> In addition, the average cost increased across the projects by \$23.5 million, more than doubling the \$21.8 million spent on average for the replaced stadiums.



**Figure 1.2 Change in Stadium Cost**

Despite lower costs relative to MLB facilities, minor league baseball stadiums are well suited for redevelopment based on their usage and architecture. Teams in affiliated baseball that play in full season leagues typically host 70 home games per season across the summer months. The large number of events relative to other sports and the length of seasons helps to introduce visitors to an area and create sustained vitality. In addition to those games, stadiums are often used for concerts and other events, though because

<sup>10</sup> It should be noted that the Colorado Springs Sky Sox, users of the only stadium that costs less than it replaced, may be relocating in the near future. Reports came out in 2016 that they would move to San Antonio, if San Antonio was able to build a new downtown minor league baseball stadium. As of 2017 the situation remains unsettled.

playing fields are generally uncovered, winter use is rarer.

Minor league stadiums are also compact in their footprint, generally fitting within 2-square city blocks. New minor league stadiums generally carry a seating capacity of 10,000 or less, and while that means that the attendance will be much smaller than that of a major league team, it also means that less dedicated parking will need to be supplied. In some cases a city's existing parking can handle the increased parking demand that the stadium requires, particularly on weekends and nights. The lack of parking lots helps to reduce the stadium's footprint and allows for ancillary activity to locate closer (Kraus, 2003).

Minor league baseball's hosts range in size from New York City (specifically Brooklyn and Stanton Island) to Burlington, Iowa, whereas Major League Baseball confines itself to the largest of American cities. The wide range of locations teams play in is displayed in Table 1. Along with parts of Canada, Mexico, the Dominican Republic, Venezuela, and Puerto Rico, one hundred and forty-five<sup>11</sup> American Core Based Statistical Areas (CBSA) host at least one team in MiLB.

**Table 1.1. Range of CBSAs hosting Minor League Baseball**

<b>Rank</b>	<b>CBSA</b>	<b>Population</b>	<b>League</b>
Smallest	Burlington, IA-IL	47,500	Single-A
25 <sup>th</sup> Perc.	Norwich-New London, CT	274,000	Single-A
Median	Harrisburg-Carlisle, PA	552,000	Single-A
75 <sup>th</sup> Perc.	Buffalo-Cheektowaga-Niagara Falls, NY	1,135,000	Triple-A
Largest	New York-Newark-Jersey City, NY-NJ-PA	19,717,000	Single-A

<sup>11</sup> The nationwide character of minor league baseball contributed to baseball becoming known as the "national pastime" prior to MLB teams relocating to Southern and Western cities or the permeation of television

The strength of studying minor league baseball's stadiums and the necessity of doing so are interrelated. The necessity derives from the large number of cities building such projects without explicit research analyzing what benefits they can expect; at present, the majority of academic research concentrates on major league sports, which as discussed, are much greater in their costs and footprints so the outcomes they produce may not be applicable to minor league stadiums.

However, because a large number of cities have built minor league stadiums with the purpose of generating urban redevelopment, it provides an expansive sample with which to study such projects. In addition, the fact that facilities are smaller in scale and cost should make lessons from the redevelopment surrounding minor league sports facilities more on par with the types of public works American cities expect to be able to finance. The larger sample size of minor league stadiums and cities includes greater variety in demographics, geography, and financial power, allowing the results to apply beyond the confines of America's largest cities. Thus, the results of studying minor league sports should be more generalizable than a sample of major league cities.

### **1.3 Theoretical Framework: Stadiums as Special Activity Generators**

Minor league baseball stadiums are a form of Special Activity Generator (SAG) popular with small-to-medium cities. As theorized by Robertson (1995), Special Activity Generators, such as stadia, performing arts centers, museums, aquariums, and convention centers, serve as redevelopment tools by attracting visitors to the area and by catalyzing private investment. Sports stadiums for major league teams as a form of SAG have been studied often by researchers for their contribution to urban redevelopment, particularly with regard to their effect on housing prices (Ahfeldt and Maennig, 2010; Feng and

Humphries, 2012; Tu, 2005; Cantor and Rosentraub, 2012), area-specific job growth (Austrian and Rosentraub, 2002), and secondary construction (Chapin, 2004).

SAGs act directly to invigorate an urban space by attracting individuals to visit an area. These visitors form a critical mass and thereby create demand that is met by the opening of additional business and services nearby. In the past, researchers have shown major league facilities to directly contribute to redevelopment by offering an appealing amenity (Tu 2005) particularly when located downtown (Johnson, 2013), varying the hours that the neighborhood is used, and attracting new residents (Rosentraub, 2011). Stadiums and SAGs are popular with government officials because they believe they act as an initial investment to jumpstart the areas development, creating an area that is attractive to private investments (Delaney and Eckstein, 2007).

Stadiums without an urban development plan and lacking a larger public-private framework for additional investments have been unsuccessful in the past, indicating that such projects will not work as an isolated investment (Rosentraub, 2011; Chapin, 2004). However, stadiums can also indirectly affect the area, acting as a fulcrum or catalyst to attract further investment into low-value neighborhoods (Curry, Shwirian and Woldoff, 2004; Rosentraub, 2011). The attraction of further development can come during the negotiations over the public contribution to the stadium or later as the market reacts to the presence of potential customers visiting the area (Chapin 2004). While those secondary investments are made in addition to the stadium, the causal effect of the stadium should include them if they would not have happened if the stadium had not built.

One motivation for the government's investment in the neighborhood, whether through a SAG or another type of public project, is to encourage private investment that

would otherwise avoid the area. Developers prefer safe profits, and an area in need of redevelopment may stall and suffer the collective action problem of the first mover impasse, whereby agents each wait for another to take the risk of making the opening move. For the most successful stadiums, particularly San Diego and Cleveland, this indirect effect is the critical assumption researchers make in estimating that the stadium has had a large impact.

However, the role of location choice for SAGs has not been explicitly studied, though researchers often describe how preexisting features of the area have been important to the resulting rejuvenation. While it is largely unstated in the literature, I assume that that neighborhoods must also have potential for increased rents and home values through the presence of under-utilized resources that are attractive to private investors, such as proximity to employment, land near natural water, historic but underutilized buildings, transportation linkages, or a central location regionally (Smith, 1979).

It is worth noting that initial boosts in visitation directly driven by the stadium will later decline as the “honeymoon effect” recedes (Clapp and Hakes, 2005; Leadley and Zygmunt, 2005). Attendance generally falls off in the years following the opening of a new stadium, which means a reduced demand for additional services. Therefore, relying on the demand of visitors to the SAG will only produce a short term effect in the area, so it is assumed that for the area to successfully redevelop additional investments must be in place and occur soon after the stadium opens.

The introduction of a stadium serves as a focusing event for the neighborhood, providing the area a new starting point from which redevelopment can follow a narrative

structure (Buist and Mason, 2010; Neisser, 1997). While this redevelopment should be viewed as having redirected spending from one part of a city to another, it gives the government the opportunity to specify where that spending occurs (Chapin, 2002). Government officials may feel compelled to do so because of the association between revitalized, vibrant downtowns and the ability to attract workers for the knowledge economy (Robertson, 1995; Jang, Hughes & Danielsen, 1997; Rosentraub, 2010).

Robertson (1995) enumerated three objectives that underlie the SAG strategy. First, SAGs should target a blighted area that has been unable to attract private sector investments to redevelop. Second, the project should be designed to create spillover spending for surrounding businesses, as well as enlivening the area during evenings and weekends. To do so, projects should take account of walking distances, exit and entry points, crowd flow, and land uses in order to integrate themselves with the surrounding urban form (Sternberg, 2002). Third, the SAG should stimulate additional construction in the surrounding community.

#### **1.4 Organization of Remaining Paper**

The following chapter reviews literature to situate my dissertation within past studies on sports stadiums as a tool of urban redevelopment. In addition, I discuss literature on alternative urban development strategies, public-private partnerships and urban renewal. The third chapter details the research methodology and results for the quantitative analyses. Specifically, I model the location of minor league baseball stadiums and evaluate the total change created by the stadium in the surrounding census tracts. Chapter 4 contains the research methodology and results from case studies of the stadiums in Toledo, Ohio and Louisville, Kentucky. The case studies analyze the role



minor league stadiums played in redevelopment in those cities. Chapter 5 concludes with a discussion of the results for both sets of analyses, with a focus on the interpretation as well as a comparison of the findings.

## **CHAPTER 2**

### **LITERATURE REVIEW**

In this chapter I review literature that guides my research and establish new lines of inquiry. The first section addresses the history of urban renewal and the tactics that federal and local governments have attempted to stem urban decline; the discussion establishes sports stadiums as being within a broader set of government-led redevelopment policies. The second section discusses the general form of stadium subsidies in order to establish the role the state plays in the projects. After the *how* of stadium subsidies is described, the third and fourth section addresses the *why* of stadium subsidies. The third section reviews evaluations of arguments put forward by proponents of stadiums about their benefits to society. While other arguments are reviewed, the focus is on how stadiums have performed as tools of urban redevelopment and the measures used to evaluate projects. The fourth section analyzes the political reasons that government officials are willing to subsidize professional sports stadiums and whose interests the policy serves. Because scant research exists on minor league sports, the majority of literature reviewed concerns major league teams and stadiums.

#### **2.1 Urban Redevelopment and Renewal**

The problems and debates surrounding sports stadiums are not isolated, as they fit within a broad history of attempts by both the federal and local governments to reshape cities. Cities and urban areas are a constant focus of governments and researchers due to their natural ability to both benefit and impair society. Cities drive the world's economies by making workers more productive and contributing to the rate of knowledge

transmission and innovation; however, they simultaneously have been centers of disease, filth, and crime (Glaeser, 2011).

Suburbanization caught policy maker's attention in the 1940s, but throughout human history the ills of cities have driven individuals to live beyond its reaches if possible (Jackson, 1985). In New York during the early 1800s, the wealthy began shifting out of Manhattan to the less populated Brooklyn as soon as a ferry service allowed them to commute for work; the movement outward continued to widen cities radii as omnibuses, horescars, and streetcars became available over the decades. In the 1950's the process accelerated as mortgages, cars, and freeways became widely available, coalescing to allow individuals to live ever further from the city-center. In the past, city boundaries had expanded through consolidation, but political pressures slowed the process as the wealthy and middle class established their own municipalities as a form of Tiebout (1956) sorting.

The federal government responded to the struggles of cities with the Housing Act of 1949, which provided money for redevelopment projects across the country. The law received broad support, as groups as divergent as businesses, local governments, planners, citizens, and advocates for the underprivileged believed its measures would invigorate cities (Zipp, 2012). The laws' greatest legacy was slum clearance, whereby the government bulldozed whole neighborhoods in order to make way for new development. Many such clearances made room for new expressways and highways to move residents in and out of employment centers, further harming cities, while others replaced low-value housing with office buildings, skyscrapers, or higher rent apartments (Carmon, 1999). Many more homes were destroyed than built through the law, and those that were built

were largely for individuals with higher incomes than those that were displaced (Greer, 1966). There were successes under the Housing Act, such as the renewal of Lafayette Park in Detroit or Baltimore's Charles Center, but the law is remembered more for its social injustices and considerable negative effects on the cultural health of cities (Teaford, 2000).

Following urban renewal's failure, the federal government worked to minimize its direct role in redevelopment. Washington did however create various grant programs, such as the Community Development Block Grant (CDBG) and Urban Development Action Grant (UDAG) that gave money to local governments to finance projects with more local control and flexibility (Carmon, 1999).

In place of a federal support, public-private partnerships have become central features of urban redevelopment since the 1960s. Public-private partnerships allow governments to structure projects while utilizing capabilities and resources from the private sector to see them completed. Often, the land used is provided by the government out of its holdings inside the city. In addition, tax credits and other inducements have been used by governments to attract private sector investment in developments viewed as high risk. Convention centers, festival marketplaces, entertainment venues, and sports stadiums have all been developed under public-private partnerships (Savas, 2000).

Despite their ubiquity, public-private partnerships have a consistent set of criticisms directed towards them. The tax credits and other tools used to aid developers are disparaged for being unnecessary and displacing the tax money the project is expected to attract. The projects are accused of serving wealthy interests, and being modern versions of the brazen slum clearance that occurred under urban renewal in the

1950's and 60's. Finally, the public benefits of the projects, which motivate the contribution of governments, are said to never materialize. The core criticism of the government's involvement and support for private projects, whether stadiums, convention centers, or others, relates to the imbalance of benefits; residents perceive that the majority of profits accrue to private interests while the public is left paying a disproportionate share of the cost.

Governments, both federal and local, have looked beyond the reconstruction of the built environment to encourage growth. In order to incentivize businesses to relocate in blighted urban areas, governments have offered businesses tax concessions and reduced regulations if they reside in enterprise zones. Evaluations have shown mixed effects on enterprise zones' ability to create new employment and redirect economic activity, in part because of the difficulty of capturing sufficient revenues to offset the costs of the program (Billings, 2008; Neumark & Kolko, 2010; Peters & Fisher 2007).

As the economy has shifted from a manufacturing to technological base, education and employee attraction has taken on increasing importance for sustaining growth. While in former decades cities focused on large redevelopment projects to attempt to attract workers back downtown, recently smaller, more flexible changes have become popular as Richard Florida's (2002) theory of the Creative Class has gained acceptance among planning professionals. Florida argues that knowledge workers are attracted to tolerant mores, talented coworkers, and technological employment and cities should stress these features to attract future growth. Florida's theory has undergone similar criticisms to that of urban renewal for ignoring the needs of the underprivileged (Leslie and Catungal, 2012; McCann, 2007) but it shows the permanence of governments

hoping to achieve growth by whatever means.

## 2.2 How the Public Subsidizes Stadiums

Every funding agreement for a sports facility is unique, but general themes across major and minor league facilities bear discussing. For the last half-century, the majority of funding for stadiums and arenas has come from public sources. Judith Longs' (2005) research on the long-term trends in stadium financing (Table 2.1) shows that facilities are receiving a lower share of their funds from the public over time despite becoming more regular and expensive.

The primary financing vehicle for stadiums comes from municipal bonds issued by either the city or county hosting the stadium. Governments issue bonds in order to raise money for the initial construction, which also requires them to pay for the development over the life of the bond. In order to retire the debt, either services must be reduced or taxes increased; normally, during the debate on the subsidy a tax increase is

**Table 2.1 Stadia Construction Costs**

<b>Time</b>	<b>Number</b>	<b>Total Cost</b>	<b>Public Cost</b>	<b>Public Share</b>
1950-59	6	51	51	100%
1960-69	25	126	98.3	78%
1970-79	28	132	117.5	89%
1980-89	14	157	103.6	66%
1990-99	52	226	128.8	57%
2000-05	20	314	210.4	67%

Source: Long, 2005.

specified, commonly being on general sales, cigarettes, alcohol, tourism, or state lotteries (Baade & Matheson, 2012; Senkiewicz, 1998). The practice of issuing tax-exempt bonds for stadiums has come under increasing public scrutiny because of its national

implications.<sup>12</sup> Tax exemptions from interest paid on municipal bonds eliminates revenue for the federal government, meaning that that entire nation is affected by each local decision.<sup>13</sup>

The land that the stadium is built on is also a component of the construction costs. Often, stadiums are built on land which the government owns portions of; but the government can also use its resources to aid the process of acquiring land they do not own. For instance, they can arrange land swaps from their own properties or negotiate a simple purchase. Finally, public utilities such as roads and sewers often must be built or updated when a stadium is being constructed, a responsibility that normally falls upon the government (Noll & Zimbalist, 1997).

Teams are also responsible for some portion of the stadium costs in most cases. Similar to governments, teams can sell bonds to investors and use revenue from the stadium to cover portions of its construction costs. Shares of the financing have also come directly from the wealth of team's owners, though that is not common or a large portion of the total cost when included. Finally, many franchises have begun selling personal seat licenses (PSLs) in the last decade, which involves an upfront payment by a fan for the right to purchase season tickets in a specific seat or seats. The license can be transferred, but if the fan forgoes buying season tickets in the future the money is not returned (Baade & Matheson, 2012).

<sup>12</sup>The use of tax-exempt bonds was actually altered by the 1986 Tax Reform Act, which closed off federal subsidies for projects if more than 10 percent of the debt is covered by revenue from the stadium. While the law was intended to hamper stadium subsidies, it may have made the revenue received by the government smaller by capping its percentage at 10 percent.

<sup>13</sup> Bloomberg gathered data on stadium deals and calculated that through 2047, when the final bond currently issued is retired, the Federal Government will have lost \$4 billion in revenue <http://www.bloomberg.com/news/articles/2012-09-05/in-stadium-building-spree-u-s-taxpayers-lose-4-billion>

The majority of stadiums are owned by the cities or counties that finance the project while teams occupy them as part of a lease.<sup>14</sup> When a team opens a new stadium or moves to a new city, they typically sign a long-term lease as part of the deal, generally ranging from twenty to thirty years (Baade & Matheson, 2012). However, as the initial lease expires, teams often sign shorter renewals while looking towards a new stadium or threatening to relocate. Leases call for an annual payment to rent the stadium that generally sit between \$10 and \$20 million<sup>15</sup> for major league sports and \$1 and \$5 million in the minor leagues (Long, 2012).

The lease outlines how concession, parking revenue, stadium naming rights, and other revenue sources are distributed between the team and stadium owner. Arthur Johnson (1995), surveyed team employees and governments in the early 1990's and found:

Only 19.1 percent (89) reported sharing stadium advertising receipts; 33.0 percent (88) reported sharing concession revenues; and 46.0 percent (37) of those communities whose teams generated parking revenue shared parking fees (p. 26).

Thus, while it is not uncommon for governments to receive some revenue from the stadiums, the relationship is unbalanced. The primary public concern with the amount paid from the lease or revenue is whether they cover the annual debt payments on the stadium for the city or county; too often, research has found that to not be the case (Goodwin, 2002; Safir, 1997).

<sup>14</sup> Teams may be disinterested in owning the stadium, because it would reduce their leverage to move to another city when they desire a new stadium in the future.

<sup>15</sup> Leases can also be considerably lower. For instance, the Kannapolis Intimidators in Single-A baseball recently signed a lease for \$1, though it also includes that the team is responsible for all maintenance costs on an aging facility.



## **2.3 Why the Public Funds Sports Stadiums**

The preceding section analyzed the *how* of public financing for sports deals; the following discussion addresses the *why* from two dissimilar, yet complementary perspectives. The first discusses the arguments that politicians make about how a stadium benefits the public. There are three such types of explanations: economic, intangible, and urban redevelopment. The section briefly reviews the first two, but focus on urban redevelopment. The second subsection discusses the reasons that politicians support stadium subsidies from the standpoint of political economy. I review literature about the public popularity of stadium subsidies as well as how the Logan and Molotch's theory of the urban growth machine explains politician's behavior.

### *2.3.1 Economic Benefits*

The primary logic behind public funding for early stadium projects, particularly those built during the 1980s and 1990s, was that they would increase regional employment and incomes (Chapin, 2004). Proponents of building sports facilities often referenced their ability to boost the local economy, citing economic impact studies claiming that a new facility will generate an increase in local income, tax receipts, and employment (Coates & Humphreys, 2008; Zimbalist, 2010). However, these studies often struggle with basic components of cost-benefit analyses. For instance, they commonly did not account for displacement effects, whereby fans at the stadium are no longer spending their leisure money at theatres or films within the city. Economic impact studies also overstated the number of fans from outside the region that would visit the stadium and used grossly oversized multipliers to enlarge the total impact (Noll & Zimbalist, 1997).

Over time, an academic consensus has solidified that the economic benefits promised by stadium proponents were never materialized (Baade, 1996; Baade, Baumann, & Matheson, 2008; Baade & Dye, 1988; Coates & Humphreys, 1999; Siegfried & Zimbalist, 2000). A 2008 literature review of peer-reviewed articles by economists found little support for the assertion that construction of a sports facility had any positive effect on the local economy, once the cost of the stadium is accounted for (Coates & Humphreys, 2008).

However, those studies focused on sports at the highest professional levels. Agha (2011) found a positive effect on income for regions with Triple-A and High-A minor league baseball teams as well as Double-A and rookie stadiums, while all other levels of competition were insignificant. The fact that the positive results capture such a wide range of leagues indicates there is not a specific level of competition that makes for the best investment, but rather that minor league baseball has the potential to be beneficial overall. While Agha's results are mixed, they stand in contrast to the negative impact she hypothesized for minor league baseball and were taken as an indication that the distinctive structures of minor league baseball may generate unique effects on host communities where there are fewer competing amenities.

### *2.3.2 Intangible Benefits*

As the academic consensus was solidifying against the economic benefits of sports stadiums, researchers began turning their attention to new justifications for stadium projects, such as intangible benefits. Intangible benefits of sports teams refers to concepts such as city pride, community solidarity, community excitement, publicity, social bonding, and the pleasure of being a fan that individuals or the region collectively receive

(Crompton, 2004). These concepts are considered intangible because they are not directly measurable, but economists have used several strategies to quantify their value. Every study on the topic has been able to identify intangible benefits of some quantity, no matter the decade, location, or methodology.

Researchers have focused on two broad categories of non-economic benefits. The first set is the private consumption goods, identified as consumer surplus based on the price of attending a game. Second, researchers have identified public goods generated by sports teams and stadiums, such as fandom and civic pride. These are non-use values, because fans and non-fans share them while only users gain a consumer surplus.

Consumer surplus is the difference between the maximum an individual is willing to pay for a good, in this case a ticket, and the amount actually paid. The logic behind such studies is that if the public subsidizes a stadium that otherwise would not be built, the subsidy is responsible for generating that consumer surplus. When aggregated for a city or region, the net consumer benefit “represents a benefit of a stadium” to the public (Irani, 1997, p.13). Sporting events have generally been found to be inelastic, meaning that fans will pay more for them regardless of the price charged and thus they generate a considerable consumer surplus (Domazlicky & Kerr, 1990; Irani, 1997).<sup>16</sup>

The critical question then, is whether the consumer surplus generated is enough to justify the public expense on the stadium. Despite all studies finding evidence of a consumer surplus, the sizes differ considerably between different teams and leagues. For

<sup>16</sup> Irani (1997), as already discussed, calculated -0.35. Scully (1989) and Coffin (1996) calculated similar elasticity's of -.63 and -.68, Bruggink and Eaton (1996) find an elasticity of -1.87. Irani (1997) cites Scully as confirmation that his elasticity conforms to past estimates, in addition to Domazlicky and Kerr (1990) who calculate the elasticity to be -.23. Finally, Whitehead et al. (2011) calculate demand elasticity's for Calgary and Edmonton of -.57 and -.77,

example, Irani (1997), who only studied Major League Baseball, found that in many cases the consumer surplus was large enough to pay for the stadium. Conversely, Alexander, Kern, and Neill (2000) studied all of the Big Four sports and found that in most cases the total amount was too small. Whitehead, Johnson, Mason, and Walker (2013) found that under certain specifications a facility could be justified, but generally the amount was less than a stadium's total cost.

The second prominent way of quantifying intangible benefits is using Contingent Valuation Method (CVM). For CVM, individuals within the team's region are surveyed to ascertain how much they are willing to pay for the stadium. CVM is an attempt to measure how much each individual values the team, whether they use it (attending or watching games) or not (enjoy being in major league city, civic pride, water cooler talk, etc.). The approach is also a prominent method for measuring other intangible goods such as clean air or protecting undeveloped land (Chestnut & Dennis, 1997).

The first effort at applying CVM to sports facilities came from Johnson and Whitehead (2000), who analyzed the public benefits of a new basketball arena for the University of Kentucky Wildcats and a minor league baseball stadium in Lexington. Their analysis, which showed the public benefits were not large enough to justify building the facilities with subsidies, proved the viability of applying CVM to the question at hand.

Numerous further studies have been done using CVM to ascertain the willingness to buy a team (Johnson, Groothuis, & Whitehead, 2001), to attract a new team to a region (Santo, 2007), its additional values located downtown versus in the suburbs (Johnson, Whitehead, Mason, & Walker, 2012), and the general value of a team (Owen, 2006).

Across these cases, the public generally is not willing to pay enough to match the public's typical contribution towards stadiums.

### *2.3.3 Urban Redevelopment*

As urban redevelopment became a more prominent goal of sports facility projects, the physical form of the stadiums and arenas changed as well. During earlier phases when regional growth was the primary goal, outdoor sports such as baseball and football were increasingly played under domes, and facilities of all types were placed in isolated areas, beset on all sides by parking with no intention that customers should interact with the surrounding community (Chapin, 1999). Modern stadiums have been built with a greater intention to blending into surrounding architectural forms, adding vibrancy to an area, and contribute to economic growth on a sub-regional level (Cantor, 2014).

**Table 2.2 Summary of Stadium Evaluations on Urban Redevelopment**

<b>Authors (Year)</b>	<b>City</b>	<b>Measure</b>
Ahfeldt and Maenning (2010)	Berlin	Housing Values
Ahfeldt and Kavetsos (2015)	London	Housing Values
Austrian and Rosentraub (2002)	Cleveland, Columbus, Cincinnati, and Indianapolis	Employment Growth
Austrian and Rosentraub (1997)	Cleveland	Employment Growth
Cantor and Rosentraub (2012)	San Diego	Housing Values and Demographics
Chapin (2004)	Cleveland and Baltimore	Urban form
Dehring, Depken and Ward (2007)	Dallas	Housing Values
Feng and Humphreys (2012)	Nationwide; Every NFL, NBA, MLB, and NHL facility	Housing Values
Johnson (1995)	Harrisburg and South Bend	Urban form
Kavetsos (2011)	London	Housing Values
Rosentraub 1997	12 Cities	Population and Employment Growth
Rosentraub, 1999	Phoenix and Indianapolis	Tax Receipts
Tu (2005)	Landover	Housing Values

The shift in stadium attributes bespoke a modification in how the projects have been evaluated. Early studies attempting to measure broad economic growth were all measuring the effects of the stadium at the city or regional level, but more recently facilities have been evaluated at the sub-city or neighborhood level. In addition, the measures used to study the project have shifted slightly, focusing more on housing market changes or changes in the urban form of an area, as shown above in Table 2.2.

Studies of stadiums are normally done through case studies, which has led to several cities becoming prominent examples of a successful sports led redevelopment strategy. For instance, Downtown Indianapolis (Austrian & Rosentraub, 2002; Rosentraub, 1997), Cleveland (Chapin, 2004) and San Diego (Cantor & Rosentraub, 2012) all experienced rejuvenation aided by a redevelopment strategy centered on sports facilities, though they followed distinct paths. Sports has helped Indianapolis to turn a torpid downtown into a vibrant center of activity, based on the restaurants and retail that three sports facilities (NBA, MiLB, and NFL) have attracted. Indianapolis has also become a center for amateur competition, in part because it is the location of the national offices for the National College Athletic Association (NCAA) and because it has the facilities to host events. In Cleveland, tourist attractions such as the Rock & Roll Hall of Fame coupled with three sports facilities (NBA, MLB, and NFL) have helped to attract individuals to live and visit downtown despite a struggling economy. Finally, San Diego built Petco Field for MLB's Padres in the Gas Lamp District, a historically distressed neighborhood. However, part of the stadium financing deal required the injection of private development capital into the surrounding neighborhoods, which has spurred a revival of an area where few tourists had ventured.

Arthur Johnson (1995) conducted case studies of minor league baseball stadiums in Harrisburg, Pennsylvania, and South Bend, Indiana that were planned for downtown redevelopment. The Harrisburg stadium was intended to revitalize and provide a greater connection between Harrisburg's downtown and a stretch of underdeveloped land called City Island. South Bend's stadium was designed to provide another means for entertainment for residents and tourists, and was part of an overall entertainment strategy along with other attractions. Both case studies were conducted soon after the stadiums opened and owing to the short time horizon no quantitative effects were discussed, but local officials reported positively about the projects.

However, not all sports projects have been successful. Projects in Baltimore (Chapin, 2004) and Phoenix (Buckman & Mack, 2012; Rosentraub, 1999) were evaluated and shown not to have contributed to redevelopment in those cities. Researchers have found that stadium projects have failed in the past because of a lack of appropriate consideration of urban form (Buckman & Mack, 2012), too much regional emphasis on suburbanization (Rosentraub, 1999), or because of a lack of subsequent investments to generate meaningful growth for surrounding neighborhoods (Chapin, 2004).

Finding universal lessons on how governments should utilize a sports stadium for redevelopment can be difficult because each city's context and conditions differ substantially. In his 2010 book *Major League Winners*, Mark Rosentraub recommends that for cities to maximize their return on redevelopment investments, stadiums should be surrounded by a concentration of other amenities, fit into the neighborhood's architecture, and that public dollars should have a signed commitment for private dollars as well.

The argument in favor of anchoring urban redevelopment with a sports facility is not that a stadium will attract residents and raise home values by itself, but rather that it will attract other investments that will cumulatively revitalize the area. Stadiums and arenas contribute to redevelopment by anchoring the area, displaying the city's commitment to surrounding neighborhoods, and attracting private capital (Chapin, 2004). The causal effect runs through sports facilities as the starting point, without which the secondary development never would have occurred.

It is not only politicians and developers that value sports led redevelopment; Johnson, Whitehead, Mason, and Walker (2012) used contingent valuation method and found that residents in two Canadian hockey cities were willing to pay more for arenas to be located centrally rather than in the suburbs. However, the value that individuals place on living near a new stadium has had mixed findings. Tu (2005) found in Landover, Maryland that properties near the new football stadium FedEx Field sold at a discount relative to comparable units away from it, showing that individuals did not value proximity to that new amenity. Conversely, Feng and Humphreys (2012) showed that results for a national sample of nearly every stadium and arena project in the MLB, NFL, NBA and NHL had positive effects at the census block level.

## **2.4 The Politics of Sports Subsidies**

Professional sport teams are ready and willing to relocate to a new city unless their demands for a new facility are met. The trend began in 1953 when the Boston Braves moved to Milwaukee, which was the first relocation to occur in major league baseball in half a century. Following the move, teams realized the allure of untapped markets and new stadiums, and began auctioning their services to the highest municipal



bidder. In the last few decades, professional sports leagues have even been accused of disallowing expansion (the creation of new franchises) in willing markets in order to maintain the threat of relocation (Zimbalist, 2010). In American society, professional sports have a high profile, and losing a team makes a city appear to be in decline (Shropshire, 1995). For cities, teams can be conceived as a form of Thorstein Veblen's conspicuous consumption, and the inability to support and retain a franchise will make the city appear to be less than "Major League."

However, stadium subsidies are not automatically popular at the polls. Mondello and Anderson (2004) found that during the 1990's, sports subsidies appeared on the ballot 26 times with 20 succeeding (77%). That result stems partially from popularity of sports, but another component is how the vote is framed. The public still expresses support for the idea that a stadium helps the regional economy, despite the clear academic consensus against that position. The proponents of subsidies have been shown to significantly outspend their opposition, by ratios as large as 20 to 1, helping them to frame the issue before the vote (Buist & Mason, 2010). In addition, politicians are skilled at avoiding votes when defeat seems likely if they are able to, so there may be selection bias in the 26 referenda Mondello and Anderson (2004) studied. The continuing success of initiatives to subsidize sports stadiums, and the forces that bring together proponents can be explained through Logan and Molotch's urban growth machine.

The urban growth machine is an extension of critical theory into local politics. Logan and Molotch (1988) focus on "place entrepreneurs" who try to maximize the value or rents of land and buildings, in contrast to corporate interests that wish to maximize the profit of production. Place entrepreneurs, the center of the urban growth machine, differ

from corporate interests in another critical form. While they often work together, they are often in tension because corporate interests have the ability to move, which can negatively affect an urban growth coalition; urban growth coalitions can fail and members can move, but each coalition is tied to a firm location. The urban growth machine endeavors to intensify land use through growth, particularly through the increase in population of their city or region. The strategies place entrepreneurs follow focus on expanding commercial land use, attracting corporations and employers, and increasing real estate values; what that ignores is quality-of-life issues such as public schools or safety.

The growth machine is dominated by place entrepreneurs, corporations, political elites, local media, and utilities as each benefits for their contributions. Place entrepreneurs, as already mentioned, are motivated to increase the value of land. Corporations enjoy the favorable business conditions that the urban growth machine proposes. Political elites gain the backing of moneyed interests in elections as well as the prestige of their offices. The local media, particularly the city's newspaper, are interested in increased circulation from population growth and the opportunity for more advertising. Finally, utilities participate for reasons similar to newspapers; population growth is the only way to increase their services. These groups collaborate, driven by their unique interests, to formulate and enforce growth based public policies. Politicians and place entrepreneurs work through the media to solidify economic growth as the primary goal of the city, arguing that it is a universal positive and will provides jobs and cultural opportunities to citizens.

The specific strategies the urban growth coalition utilizes have shifted over time.

The coalition still focus on a consistent message through the local media centered on the benefits of growth, but as the industrial economy has decline they have been forced to decrease their emphasis on tax incentives for large employers. New economic development strategies have intensified, as urban growth machines now “compete for the right mix of local spoils from the transnational web of commodity chains, streams of tourists and conventioners, advanced service industries, innovation clusters, and rapidly shifting niche consumption spectacles” (McCallum, Spencer, & Wyly, 2005, p. 30).

Sports have always been an aspect of the urban growth coalition theory. Logan and Molotch (1988) acknowledged sports central place in American culture:

The athletic teams in particular are an extraordinary mechanism for instilling a spirit of civic jingoism regarding the “progress” of the locality. A stadium filled with thousands (joined by thousands more at home before the TV) screaming for Cleveland or Baltimore (or whatever) is a scene difficult to fashion otherwise. This enthusiasm can be drawn upon... in order to gain general acceptance for local growth-oriented programs (p. 315).

The connection between urban growth machines and subsidies for sports stadiums has not been lost on subsequent researchers.

Delaney and Eckstein (2003) studied how urban growth machines succeeded and failed in nine American cities. Their research attempted to move the focus of stadium initiatives away from the teams themselves and towards the structural processes of local urban growth coalitions. Coalitions that could articulate a clear pro-growth vision for the city and connect that message to the stadium initiative were successful at building stadiums with larger shares of public funding; where urban growth machines were weak, stadium subsidies were either smaller or the efforts failed. The outcomes resulted in large part from the growth coalition’s ability to control media coverage, ensuring that the

balance of discussion of the stadium was positive and particularly that the message connected growth with public benefits:

It is not necessarily that policymakers in strong coalition cities do not care about more quality-of-life, neighborhood issues; they just seem more likely to believe that community needs will be addressed most adequately when the social benefits of new publicly financed stadiums ‘trickle down’ to the neighborhoods (p. 351).

The importance of controlling the local media was again apparent in Buist and Mason’s (2010) study of newspaper coverage in stadium debates for two public votes in Cleveland, Ohio. True to Logan and Molotch’s theory, researchers show that newspaper supported both initiatives as evidenced through the content of its coverage.

“Growth coalitions often favor large, visible projects” and there are few larger than the Olympics, which attracts international tourists and delegates to the host city (Delaney & Eckstein, 2007, p. 334). Hiller (2000, p. 450) studied the Cape Town, South African bid to host the Olympics and found that the effort “was clearly a booster mechanism to build consensus around a pro-growth ideology” pushed by the local growth coalition. Hall studied the tactics behind bids for sports mega-events, and found that the strength and cohesiveness of the urban growth machine was a predictor of their success. Finally, McCallum et al. (2005) studied how that urban growth machines had transitioned their activities to focus on image-creation activities as part of the shifts in economic development strategies. In particular, they studied Vancouver’s Olympic bid (and the stadiums it would necessitate) to understand how elites coalesced around new tactics for the same interest Logan and Molotch identified.

## **2.5 Summary**

There is a long history of government involvement in urban and economic

development. As part of those efforts, sports facilities have received increasing funds from the public sector, principally since the 1950s. However, since that time the logic of public support for such projects has shifted from regional economic benefits to more localized urban redevelopment goals.

Stadiums and arenas have been shown to be successful to a certain extent when evaluated on their effects on urban redevelopment; however, existing studies have focused on the costlier and less numerous major league facilities. My research builds upon those studies, expanding the cities analyzed to those hosting minor league sports.

## **CHAPTER 3**

### **QUANTITATIVE ANALYSIS**

Chapter 3 is comprised of two distinct but complimentary sets of quantitative analyses. I first determine the demographic and housing predictors of stadium locations before evaluating the effects of stadiums on surrounding neighborhoods after one decade.

I analyze the locations of minor league baseball stadiums both with respect to their neighborhood's qualities at the time that the stadium opened and the changes in the neighborhood in the decade preceding construction. The location analysis tests a key tenant of the special activity framework, namely that minor league stadiums are being placed in areas in need of redevelopment and that they were not undergoing redevelopment prior to the stadiums opening. The location analysis is primarily concerned with the development position of neighborhoods prior to and at the time of the stadiums opening.

The second section contains the evaluation of stadiums effects against three samples of control tracts. By evaluating treated neighborhoods in comparison to both their host cities and cities without facilities, the analysis can address whether stadiums generate revitalization or growth. The evaluation section focuses on the changes to neighborhoods after the opening of the stadium.

Chapter 3 proceeds by first discussing the shared data sources and sample of stadiums for both sets of quantitative analyses (Section 3.1). Section 3.2 contains the analysis of stadium locations, including both the methodology and results of the analysis. The third section (3.3) discusses the methodology and results for the evaluation of stadium effects after opening. While the results are outlined within each section and are

summarized in Section 3.4, they are more fully interpreted in Chapter 5.

### **3.1 Data Sources**

#### *3.1.1 Data*

The unit of analysis is the census tracts in both quantitative sections because stadiums are intended by government officials to have a highly localized impact and census tracts are the smallest geography regularly available for analysis longitudinally (Cantor, 2014). Census tracts are an imperfect approximation of neighborhoods, but have been commonly used to study urban redevelopment in the past (e.g., Baum-Snow & Kahn, 2000; Hammel & Wyly, 1996; Kahn et al., 2010). The Census Bureau designs tracts to be relatively homogenous units in regards to population, income, housing, and demographics, making them an applicable, though imperfect, representation of neighborhoods (Clapp & Wang, 2006). However, because they are established to fit arbitrary and consistent sizes<sup>17</sup>, they cannot replicate the variation in dimensions for neighborhoods in every instance.

I acquired the specific data used from the Longitudinal Tract Data Base (LTDB), a dataset built and maintained by researchers at the US2010 project housed at Brown University. The LTDB is publicly available decennial census data for every decade between 1970 and 2010 that researchers have reconfigured into consistent geographic units based on 2010 boundaries (Logan, Xu, & Stults, 2014). Census researchers modify their geographies each decade to keep tracts a uniform size across the country, meaning that the borders of tracts do not match over time. The LTDB is ideal for the longitudinal

<sup>17</sup> Census tracts are designed to each include roughly 4,000 residents. Case in point, in the 2010 LTDB data, the mean population for census tracts was 4,158 and the median was 3,958 while the 25<sup>th</sup> and 75<sup>th</sup> percentiles were 5,5256 and 2,837 respectively. However, the extremes sway quite far from the ideal, with one percent of tracts recording zero residents and the maximum observed was 39,250.

study of census data because it makes tracts directly comparable from 1970 to 2010. While similar data has been available in the past for a fee from private companies, the LTDB is the first source that is publically available.

I manually collected all data on minor league baseball stadiums through web searches. First, I built a list of all minor league baseball teams and their leagues based on information available from the MiLB or independent league websites. Using the names supplied on the leagues' lists, I accessed each team's individual website, from which I added information on their stadium name, its opening date, and its physical address. I used the stadium's address and a free geocoding website<sup>18</sup> to link each ballpark to its longitude and latitude.

### *3.1.2. Stadium Sample.*

I limit the sample to stadiums that opened between 1998 and 2002 in order to use the 2000 Census as a pretreatment observation. While using 2000 statistics as the time of treatment for a stadium built in 1999 is not perfectly accurate, I assume that a stadium's effect would not be visible after two years and the results are substantively similar if these stadiums are excluded. I limit my study to stadiums built near the year 2000 because census data for earlier decades is more likely to be missing in the LTDB, affecting the completeness of the sample.

The stadiums included host teams in Triple-A, Double-A, High-A, and Low-A from the MiLB and independent league teams from the Atlantic League of Professional Baseball and the American Association.<sup>19</sup> In addition, I limit the sample of stadiums to those that are in urban areas and close to their cities downtown. A stadium positioned in a

<sup>18</sup> geocoder.us

<sup>19</sup> see section 1.2 or Appendix A for a description of the levels of minor league baseball



new-build Greenfield site is considerably different in its purposes from a project built within a declining industrial section of an inner city (De Sousa, 2000). The special activity generator framework is established to evaluate projects located in blighted areas, and so suburban projects are not applicable.

I used the geographic coordinates and the Missouri Census Data Center's (MCDC) Geographic Correspondence Engine to find all census tracts that are treated by the new stadium. I identify census tracts as being "treated" if it has a centroid within 1 mile of the new stadium. A similar operationalization of identifying treated tracts in urban redevelopment studies can be found in Kahn (2007) when he studied gentrification around new rail transit stations.

**Table 3.1 Stadiums and Cities in Sample**

<b>Stadium</b>	<b>City</b>	<b>Population (2010)</b>	<b>League or Level</b>	<b>Cost (2010 \$M)</b>	<b>Opened</b>
AT&T Field	Chattanooga, TN	167700	AA	\$12.66	2000
AutoZone Park	Memphis, TN	646900	AAA	\$58.25	2000
Cambells Field	Camden, NJ	77300	ALPB	\$30.78	2001
Cambells Field	Philadelphia, PA	1,526,000	ALPB	\$30.78	2001
Chickasaw Bricktown Ballpark	Oklahoma City, OK	580000	AAA	\$45.75	1998
Chukchansi Park	Fresno, CA	494700	AAA	\$55.76	2002
Dozer Park	Peoria, IL	115000	Low A	\$19.39	2002
Fifth Third Field – Dayton	Dayton, OH	141500	Low A	\$27.86	2000
Fifth Third Field – Toledo	Toledo, OH	287200	AAA	\$47.51	2002
Haymarket Park	Lincoln, NE	258400	Am. Assoc.	\$36.36	2001
Louisville Field	Louisville, KY	597300	AAA	\$49.39	2000
Raley Field	Sacramento, CA	466500	AAA	\$50.65	2000
Raley Field	West Sacramento, CA	48700	AAA	\$50.65	2000
The Ballpark at Harbor Yard	Bridgeport, CT	144200	ALPB	\$25.42	1998
TicketReturn.com Field	Myrtle Beach, SC	27100	High A	\$17.02	1999
U.S. Steel Yard	Gary, IN	80300	Am. Assoc.	\$54.54	2002
Veterans Memorial Stadium	Cedar Rapids, IA	126300	Low A	\$19.99	2002
Whitaker Bank Ballpark	Lexington-Fayette, KY	295800	Low A	\$16.62	2001

In total, there were 16 stadiums built between 1998 and 2002 with 64 treated

tracts in 18 cities.<sup>20</sup> The complete list of stadiums and places studied is provided in Table 3.1, along with city populations, level of competition, stadium costs<sup>21</sup> and year opened.

### **3.2 Stadium Locations**

#### *3.2.1 Methodology*

The first quantitative section studies the locations of minor league baseball stadiums, both in 2000 and with respect to changes one decade earlier. First, I use a logit regression model to see what factors predict that a census tract will be near a new minor league baseball stadium. Then, I conduct t-tests for the difference in means for the changes in the treatment and control group from 1990 to 2000 to analyze whether redevelopment had preceded the stadiums opening.

The comparison sample of non-treatment tracts is restricted to the same region as the stadium in order to ensure that a tract near a stadium built outside the study sample (e.g., 2003) will not be used as a control tract. However, choosing the correct geographic level to study for each stadium proved problematic. Preferably, I would compare tracts near the stadium to other tracts that were also likely to be selected, meaning those within the jurisdiction of whatever governmental body contributed to its construction. In order to select an appropriate geography, I collected data from *The Sports Facilities Report* on what level of government paid for each stadium in AAA to determine the correct geographic level. I analyzed whether stadiums were financed by the city, county, or state without regard for how much was contributed: twelve were funded by the city, eight by the county, and seven by the state. Six had more than one public body contribute funds

<sup>20</sup> The two stadiums that treat tracts in different cities both lay near a river that acts as a city border. Thus, the downtowns of both cities lie in close proximity.

<sup>21</sup> Data for stadium costs is described in Footnote 8.

and five were financed without public money. Thus, because cities are the most common political body to fund stadiums, I limit my sample to the cities in which stadiums are located. In several cases, stadiums were near the borders of cities and thus “treated” tracts in multiple cities; in such cases, all treated cities are included. In total, the 18 cities in the sample comprise a control group of 1,674 tracts to compare against the 64 treated tracts.

No conditions qualify an area to be near a baseball stadium. However, theory and past research can help to guide the variables tested for their relationship with new urban redevelopment projects. I hypothesize that stadiums will be located in blighted areas because government and developers are likely to view the neighborhoods (if not the residents) as benefitting from the increase in activity, and those residents are unlikely to be able to prevent the project.

Affluent, educated residents have fought past redevelopment efforts in the past because they were concerned with social disruptions and changes in the community; underprivileged communities may have held similar concerns, but were unable to successfully organize their efforts (Fainstein, 1986; Squires, 1989). Thus, poverty should positively correlate to the chances of a neighborhood being near a stadium while the share of residents with a college education should be a negative predictor.

Median home values should negatively predict the chances of a stadium being located near a neighborhood. Property that is more expensive raises the costs of construction, and higher home prices imply greater political capital and human capital for residents. Similarly, the percentage of homes that are owned by their occupants should increase the costs of purchasing land and also imply greater affluence on the part of residents. Owner-occupied housing indicates how residential an area is, and with home

ownership comes a greater investment in neighborhoods and particularly more resistance to change. Perhaps just as importantly, areas where land is owned by more individuals would create greater costs and in time and money for land acquisition.

Race and urban redevelopment have complicated relationships. For many large cities, there is a strong correlation between poverty and race, as inner cities have become synonymous with the plight of African-Americans. Because African-Americans typically possess less political capital, their neighborhoods could be targeted for redevelopment efforts as they have been consistently in the past (Fainstein, 1986). Alternatively, developers may avoid neighborhoods known to be populated by minorities because of fears that suburban customers will not visit a venue in such a location. Thus, there is no prediction for how the percentage of minorities will correlate with stadium locations.

Housing has been proven to go through a process of filtering, whereby older stocks of residencies filter to being owned by poorer communities as the rich are drawn to new developments (Lowry, 1960). Therefore, housing stocks that are older should positively predict the location of stadiums because the property should be less expensive. Neil Smith's (1987) theory of the rent-gap predicts that these locations may also be targeted because they can be redeveloped at low costs and turned into premium neighborhoods. In addition, the history of revitalization and rebuilding of aging housing as part of gentrification in areas like Brownstone Brooklyn indicates that older housing can attract new, wealthier residents (Lees, 2003; Osman, 2011). Thus, either because of costs or redevelopment potential, older housing stocks should positively predict the likelihood of being near a new stadium.

The housing density and percent of housing that is vacant help to control for the

land use in the tract. Neighborhoods that are built with more density would create greater difficulty for developers to acquire suitable plots of land. However, the vacancy rate of the area, which ranges in the sample up to 68 percent, helps to adjust for how heavily the land is used as well as the shape of the built environment. I predict that a higher housing density should have a negative effect on being near a stadium, while a higher rate of vacant housing should have a positive impact.

The share of residents that are under eighteen years of age should negatively predict the locations of new stadiums. A greater residential concentration can raise the costs of purchasing land (similar to median home values and home ownership) and a greater number of minors would increase the social impact of dislocations, and therefore intensify the complications of the project.

The final independent variable tested is the percentage of total area within a census tract that is water. In the past, bodies of water were often the location of factories, but since economic restructuring took hold many have been in need of major redevelopment. If an area near water has fallen into blight, developers and place entrepreneurs may be particularly keen to locate the stadium near water because of the added potential for increased home values in the area. Acquiring the land for waterfront stadiums may be more expensive, but the increase in profits for ancillary developments would outweigh the added costs because of the amenity. In addition, the history of waterfront stadiums indicates that the sign for the percentage of water should be positive.

If stadiums are located in underdeveloped areas as predicted, then treated tracts should be located in a cluster of impoverished tracts (Tannen, 2016). Thus, stadium locations may not be determined only by the traits of individual tracts, but rather larger

areas of underdevelopment. I include a second version of the location regression in order to account for the levels of poverty, home ownership, and housing 30 years or older for surrounding tracts. These variables are included in a separate regression in order to observe their effect on stadium location as well as their impact on other variables tested.

I test the location of stadiums using a logit regression, because the dependent variable (stadium treatment) only takes the values 0 and 1. In addition to the variables listed above, the city for each tract is included to account for regional differences within the sample, and robust standard errors are reported to reduce heteroskedasticity.

The specific measurement of all variables is described in Table 3.2 along with summary statistics for the sample, stratified by whether or not the tract is near a stadium.

**Table 3.2 Summary Statistics in 2000**

<b>Name</b>	<b>Definition</b>	<b>Tracts Near Stadium</b>	<b>All Other Tracts</b>
Stadium Treatment	Tract with a centroid located within one mile “as the bird flies” of the stadium	1	0
% of Housing 30 Years+	Percentage of housing structures that were built 30 or more years earlier (1970 or earlier)	72.8%	63.6%
Housing Density	Total number of houses per square mile (logged in the regression)	2581	3312
% of Housing Vacant	Percentage of all housing units that are unoccupied	14.6%	8.6%
% of Tract – Water	Percentage of total area that is water	8.8%	1.7%
% of Housing Owner-Occupied	Percentage of housing units occupied by their owners	29.8%	59.4%
Median Home Value (Log)	Median home value	\$89,677	\$116,312
% in Poverty	Percentage of residents meeting federal definitions of poverty	35.0%	18.5%
% of Population Under 18	Percentage of residents below age 18	24.4%	25.7%
% College Educated	Percentage of residents that have earned a college degree or higher	14.3%	22.0%

Table 3.2 (continued)

% Minority	Percentage of that are not non-Hispanic white	65.1%	44.3%
Surrounding % in Poverty	Percentage of residents meeting federal definitions of poverty in all directly neighboring tracts	13.4%	16.2%
Surrounding % of Housing 30 Years	Percentage of housing structures built 30 or more years earlier in all directly neighboring tracts	59.9%	59.1%
Surrounding % Owner-Occupied Housing	Percentage of housing units occupied by their owners in all directly neighboring tracts	51.6%	51.4%

In a separate analysis I study whether there are consistent differences between the treatment and control group in demographic and housing changes prior to the stadium opening. If neighborhoods near the stadium are found to be improving prior to the facility opening it would jeopardize the argument that the project had a significant effect. That question is addressed with analyzing the changes from 1990 to 2000 for the treatment and control group on the same covariates included in the regression.<sup>22</sup>

### 3.2.2 Results

The predictors of stadium locations are reported in Table 3.3 as log-odds; the specific results and magnitudes I discuss come primarily from the first regression, while the second regression is used primarily to analyze the specific effect of the variables for the collective traits of the surrounding tracts. Across both sets of regressions, all variables are in the direction predicted, though not all differences reach statistical significance.

The housing qualities of a neighborhood appear to have minimal effect when controlling for all else in the model. The share of total housing that is owner-occupied is

<sup>22</sup> Water is omitted from the analysis because it did not change in the sample.

the only variable that reaches statistical significance in predicting whether a tract will be near a new minor league baseball stadium. An increase in home ownership of one-percentage point lowers the log-odds of the tract being treated by a stadium by .046, holding other aspects of the housing stock, presence of water, demographics, and city constant.

**Table 3.3 Location Analysis Regression**

	(1) Near Stadium I	(2) Near Stadium II
% of Housing 30 Years+	0.0040 (0.0093)	0.0055 (0.0098)
Housing Density (Log)	-0.072 (0.19)	-0.035 (0.19)
% of Housing Vacant	0.022 (0.023)	0.025 (0.024)
% of Housing Owner-Occupied	-0.046*** (0.013)	-0.047*** (0.013)
Median Home Value (Log)	-0.36 (0.41)	-0.34 (0.43)
% of Tract - Water	0.075*** (0.017)	0.075*** (0.017)
% in Poverty	0.038** (0.018)	0.037** (0.018)
% of Population Under 18	-0.084*** (0.031)	-0.079** (0.031)
% College Educated	0.00094 (0.025)	-0.00097 (0.026)
% Minority	0.033*** (0.012)	0.030** (0.012)
Surrounding % in Poverty		-0.013 (0.032)
Surrounding % of Housing 30 Years		0.025 (0.016)
Surrounding % Owner-Occupied Housing		-0.097* (0.050)
Constant	4.03 (5.58)	11.2 (7.25)
Observations	1,738	1,738
City FE	Yes	Yes
Robust SE	Yes	Yes
Pseudo R2	0.47	0.48



As hypothesized, stadiums had a strong propensity to locate near water. A one-unit increase in the percentage of total area in a tract that is water raises the log-odds of stadium treatment by .75. These locations help create iconic sightlines, and areas near water are often primed for redevelopment after manufacturing has vacated cities.

The strongest negative predictor in the model is the percentage of residents that are under the age of 18. When holding all other independent variables constant, a one-unit increase in the share of minors lowers the log-odds of a tract being near a stadium by .84. While the effect of being residential is also captured by the owner occupied rate, the age of residents has an additional influence.

Two other demographics also have a significant effect on a tracts likelihood of being near a new stadium. The share of poverty increased the log-odds by .038 holding all else constant, another indication of how important political power is to preventing major redevelopment projects. In addition, and perhaps of greatest interest from a political economy standpoint, is the significant effect of the percent minority on stadium location. Holding all else constant, a one-unit increase in the share of minorities raises the log-odds by .033.

The variables that were insignificant also hold worthwhile information. Older housing stock did increase the chances of being near a stadium as predicted, but thirty years may not be a long enough time horizon to capture the full effect. With more detailed information, particularly with respect to the percentage of housing built prior to suburbanization and World War II, the age of the housing stock may have added more information to the regression. Housing values were also insignificant, which may be because homes themselves are unlikely to be cleared for stadium projects and so the

value of residential land has less of an effect than predicted. The same argument holds for the housing density in a tract and the residential vacancy rate. Finally, the share of college educated workers is insignificant, but its high correlation with home-ownership rates and poverty helps to explain its lack of influence.

The variables for the collective traits of the tracts surrounding each tract presented in column II do not add to the model's ability to predict stadium locations. For instance, the differences between the treatment and control group are much smaller on the surrounding traits than those reported for the individual tracts themselves in the summary statistics in Table 3.2. In the regression the only variable that is significant is the share of owner-occupied housing, and that is only at the .1 level.

Perhaps of most importance is the lack of effect from the new variables on the other measures included in both models. While the magnitudes of some variables did shift slightly, in no cases did the significance change. The indication is that the traits of a tract and those of the surrounding area are mostly uncorrelated, which contradicts the hypothesis that led to their inclusion. The overall lack of significance for surrounding tracts indicates that tracts are the correct unit of analysis, and that a broader geographic footprint would obfuscate the effects.

Taken together, these findings indicate that minor league baseball stadiums do locate in underdeveloped, blighted areas where residents will have less political voice to oppose the project.

Even if located in blighted areas, stadiums may have been placed where the process of redevelopment had already begun, and therefore, would not be the primary agent of change. However, the results shown in Table 3.4 for the changes from 1990 to

2000 for the treatment and control indicate that neighborhoods near the ballpark were not already redeveloping prior to the stadium opening. Roughly half of the differences in the sample are insignificant at even the .1 level, and those which are significant are inconsistent in their direction.

Median home values were significantly different for the two groups, but declined in both and at a faster rate in the treated tracts. Across the country, housing prices increased between 1990 and 2000 when adjusting for inflation; however, because the sample is constrained to urban areas, of which several are in the rust belt, the total effect for both groups was one of continued decline entering 2000. The larger decline near the stadium is a clear signal that the areas had not improved prior to the stadium's opening.

**Table 3.4 T-Test for Changes from 1990 to 2000**

Variable	Treatment	Control	T-Test
$\Delta$ % of Housing 30 Years+	10.56	11.98	
$\Delta$ Housing Density	-136.2	9.3	**
$\Delta$ % of Housing Vacant	-1.11	-0.40	
$\Delta$ % of Housing Owner-Occupied	-0.36	-0.39	
$\Delta$ Median Home Value	-\$14899	-\$693	**
$\Delta$ % in Poverty	-1.96	0.97	***
$\Delta$ % of Population Under 18	-0.84	0.40	
$\Delta$ % College Educated	2.23	2.09	
$\Delta$ % Minority	5.56	9.77	**

Housing density also declined near the stadium, which may be a sign of the area being cleared for the stadium, but that interpretation is a weak indication that the area was already successfully redeveloping. Poverty did decrease near the stadium, the only signal of demographic change that would be considered positive. Finally, minorities increased in both the treatment and control, but more slowly near the stadium; it is unclear whether that findings has implications for the areas potential for urban redevelopment, but it is

included for the sake of completeness.

### **3.3 Evaluation**

The second quantitative section evaluates stadium projects based on changes in the housing value and demographics in surrounding communities irrespective of what other investments or strategies are used in the neighborhood. I assume that nothing else systematically occurs across the span of my sample in the area I regard as being treated by the stadium, leaving the stadium as the primary cause for any observed redevelopment.

#### *3.3.1. Methodology.*

I use the same sample of 16 stadiums and 64 treated tracts as described for the location analysis. However, I use three control groups in order to analyze the effect of minor league baseball stadiums on urban redevelopment. The three samples allow for the testing of the effect of stadiums under different circumstances and act as robustness checks on the results.

The first sample is constructed from all treated and untreated tracts within the cities that host minor league teams. Using all tracts allows for a broad comparisons of the treatment tracts and the entirety of the city they reside in to serve as a useful point of reference for the other samples. The first sample can be considered the primary, or naïve test, of the hypothesis that stadiums contribute to urban redevelopment.

However, differences between the treatment and control group shown earlier in Table 3.2 may introduce selection bias, making it more difficult to identify the exact effect of stadiums. The fact that treated tracts are shown to generally be impoverished and underdeveloped could influence the results in either direction. In order to diminish

the effects of selection bias on the results, I use propensity score matching to adjust the sample.

To use propensity score matching, I estimate a model of best fit based on the results I derived in Section 3.2. A chi-square test that determines whether significant differences between the treatment and control group are present was used to guide how many matches are included in the post-processing sample (Ho, Imai, King, & Stuart, 2007). With only 64 tracts receiving the treatment and 1,674 as potential control tracts there were few issues in finding appropriate matches. Ultimately, I matched at a 5-to-1 ratio reducing the sample from 1,738 to 384. Once the data is limited to a pool of similar units, I will run the same parametric model I did for the full sample.

The third and final sample of control tracts is pulled from metropolitan areas that do not host major league sports, Minor League Baseball, or established independent league teams. The first two samples test how treatment tracts compare to other tracts in their own city, but it is possible that a stadium concentrates naturally occurring redevelopment activity in one location, creating a negative effect throughout the rest of the city as much as a positive effect in the treated area.

In order to test whether any effects are from the concentration or growth, I create a sample of tracts in cities with no comparable facilities to compare against the treatment group. I identify 741 metropolitan and micropolitan statistical areas that built no stadium for a major or minor league sports at a level comparable to those included in the treatment group.<sup>23</sup> The pool of regions without sports provides 49,342 tracts, which if

<sup>23</sup> It is possible that professional baseball, hockey, or soccer is being played in these areas. However, these leagues would be so insignificant that they are unlikely to command new facilities, thus making it unlikely there are any tracts that I would consider “treated” in the control group. In addition, some areas lost a minor league baseball team (for example, Richmond, VA) during the period being studied and will be included

fully included would threaten the ability of the stadium to reach a minimum detectable effect. Therefore, I again use propensity score matching to create a more comparable and balanced sample.

I use the same matching model that I employed to construct the second sample, except for the addition of two new variables: total population and median income for the metropolitan area in 2000. As Davis (2006) shows, these variables are highly predictive of whether a MSA hosts a minor league team and I want to ensure that I am comparing not just similar tracts, but tracts within cities and regions that are reasonably similar. Because most metropolitan areas without professional teams do not have comparable median incomes or populations, it was more challenging to find suitable matches in this sample. However, I am able to match at a 2-to-1 ratio, providing a total sample size of 192. The list of cities that are included in the third sample are listed in Appendix B.

Across all samples, I test the treatment of receiving a stadium using a simple binary variable indicating whether the census tract does or does not have a centroid within one mile ‘as the crow flies’ of the new stadium. I analyze redevelopment with five dependent variables, in order to capture different aspects of the process that proxy for outcomes that Robertson (1995) identifies as being elements of special activity generators. No one census variable can capture the full result of redevelopment, so the five variables are themselves a form of triangulation. The LTDB has data allowing me to test whether the area appears rejuvenated and enlivened, in addition to the presence of new residential construction.

The first dependent variable is the percentage change in median home values

among those without a team because my assumption is that their facility was ageing and their inability to replace it was part of the reason that they lost the team

(adjusted for inflation), which reveals whether individuals place a greater value on living near a minor league baseball stadium, similar to Feng and Humphries (2012). In addition to the stadium, changes in the residential vacancy rate for the neighborhood should negatively affect housing prices. Land that is near water should also be primed for redevelopment, along with neighborhoods that have older stocks of housing. Finally, the percentage of owner-occupied housing in the previous decade should help control for the character of the housing stock and whether the area was previously residential. It should be noted that median home values are only reported for census tracts with owner-occupied houses. Therefore, the regressions for median home value have slightly fewer observations than the others, as denoted in each table.

%  $\Delta$  Median Home Value

$$= \text{Stadium Treatment} + \% \Delta \text{ Vacancy} + \% \text{ of Tract that is Water} \\ + \text{Lagged \% Owner - Occupied Housing} \\ + \text{Lagged \% of Housing 30 Years}$$

While it is expected that a successful redevelopment project would increase housing prices, the change in both supply and demand for housing should be evaluated. If the supply of housing is increased after the stadium is built, prices may remain steady even if the area is more valued by residents. Thus, the second dependent variable tested is the percentage change in total housing units to evaluate whether new construction has occurred in the area. Housing units are the only type of buildings included in the LTDB, meaning it will only measure changes in the residential housing stock and not commercial developments.

The number of housing units is predicted to be affected by the change in the type of housing in the area, as areas adding apartment complexes should grow faster than those building single-family homes. In addition, the presence of water as an amenity

should attract developer's attention and affect increases in the housing stock. Lagged values for the residential vacancy rate, the percentage of owner-occupied housing, the age of the housing stock, and manufacturing employment help to proxy for the character of the neighborhood. Areas higher on those qualities should be less desirable to developers and thus should negatively effect changes in housing stock.

$$\begin{aligned} \% \Delta \text{ Total Housing Units or Log } (\Delta \text{ Total Housing Units}) \\ = & \text{ Stadium Treatment} + \% \text{ Change in Owner} - \text{ Occupied Housing} \\ & + \% \text{ Percent of Tract} - \text{ Water} + \text{ Lagged } \% \text{ of Housing Vacant} \\ & + \text{ Lagged } \% \text{ Owner} - \text{ Occupied Housing} \\ & + \text{ Lagged } \% \text{ of Housing 30 Years} + \text{ Lagged } \% \text{ Manufacturing Workers} \end{aligned}$$

The percentage change in population living in the area is the third dependent variable. An increased number of residents would introduce greater demand for services and help to vary the hours that spaces are populated, a central goal of Special Activity Generators. In addition to the stadium, I include controls for changes in the unemployment and the type of housing available in the area. Lagged variables for the type of housing that was available proxies for the character of the neighborhood one decade earlier while the percentage of housing that was vacant helps to control for the availability of housing. Finally, the percentage of minorities is included because of America's long-standing issues with residential segregation and the potential that these areas would be viewed unfavorably.

$$\begin{aligned} \% \Delta \text{ Population or Log } (\Delta \text{ Population}) \\ = & \text{ Stadium Treatment} + \text{ Change in } \% \text{ Multi} - \text{ Family Housing} \\ & + \text{ Change in } \% \text{ Unemployed} + \text{ Lagged } \% \text{ Owner Occupied Housing} \\ & + \text{ Lagged } \% \text{ Minority} + \text{ Lagged } \% \text{ of Housing Vacant} \end{aligned}$$

The fourth dependent variable is the percentage change in vacancy rates. A neighborhood with increased value will have a lower amount of its housing stock sitting vacant, which harms the vibrancy and safety of an area (Immergluck and Smith, 2006).



Vacancy rates are predicted to also react to the prior conditions of the neighborhood in terms of the type of housing and resident employment. In addition, changes in the size of the population or the housing stock should effect vacancy rates by increasing either the demand for or supply of housing.

$$\begin{aligned}\Delta \% \text{ Vacant Housing} \\ &= \text{Stadium Treatment} + \% \Delta \text{ Population} + \% \Delta \text{ Housing Units} \\ &+ \text{Lagged \% Manufacturing Workers} \\ &+ \text{Lagged \% Owner Occupied Housing}\end{aligned}$$

I analyze the percentage change in the median household income as the fifth and final dependent variable. Higher incomes would indicate that the area had redeveloped, and that there is more money to be potentially spent at local businesses. However, changes in median incomes could result from two sources, either a change in the composition of the neighborhood and wealthier residents entering, or an increase in employment opportunities following the redevelopment. Additional controls for the employment and education profile of the tract, both from the time that the stadium was built and for the changes following the stadiums arrival are thus included to disambiguate the source of increases in local wealth if one is identified. Enrico Moretti (2012) and Charles Murray (2013) have studied how regions with higher percentages of college graduates have diverged from less well-educated areas, and I expect to see a similar result at a more local level. The lagged percentage of manufacturing workers will proxy for the type of employment surrounding the area prior to the stadiums opening. I also include variables for the changes in the education level or employment profile for the area, which should help identify whether the change in neighborhood income result from shifts in the residents or growth in local employment; an area with an increasing share of either should see positive changes in income. Finally, the change in the poverty rate should act

as an additional control for changes in the character of the neighborhood.

$$\begin{aligned} \% \Delta \text{ Median Income} &= \text{Stadium Treatment} + \Delta \% \text{ College Educated} + \Delta \% \\ &+ \text{Lag \% Professional Workers} + \Delta \% \text{ Poverty} \\ &+ \text{Lagged \% College Educated} + \text{Lag \% Manufacturing Workers} \end{aligned}$$

Table 5 further defines and specifies each of the dependent variables used. In the case of median home values and median incomes, the change is transformed into a percentage. For housing and population, separate analyses report the percentage change and logged change. With several samples, different transformations of the dependent variables allowed for a superior fit of the model because of the presence of extreme outliers within the raw change. Finally, the change in the percentage vacancy rate is reported as is and should be interpreted as the percentage point change.

**Table 3.5 Dependent Variables**

<b>Variable</b>	<b>Description</b>	<b>Calculation</b>
% $\Delta$ Median Home Value	The percentage change in median home value from t-1 to t	$\frac{[\text{Median Home Value (t)} - \text{Median Home Value (t-1)}]}{\text{Median Home Value (t-1)}}$
% $\Delta$ Median Income	The percentage change in median income from t-1 to t	$\frac{[\text{Median Income (t)} - \text{Median Income (t-1)}]}{\text{Median Income (t-1)}}$
% $\Delta$ Population	The percentage change in population from t-1 to t	$\frac{[\text{Population (t)} - \text{Population (t-1)}]}{\text{Population (t-1)}}$
Log $\Delta$ Population	The log change in population from t-1 to t	$\text{Log}[\text{Population (t)} - \text{Population (t-1)}]$
% $\Delta$ Housing Units	The percentage change in housing units from t-1 to t	$\frac{[\text{Housing (t)} - \text{Housing (t-1)}]}{\text{Housing (t-1)}}$
Log $\Delta$ Housing Units	The log change in housing units from t-1 to t	$\text{Log}[\text{Housing (t)} - \text{Housing (t-1)}]$
$\Delta$ % Vacant	Change in the percentage of the housing stock that is vacant	$\% \text{ Vacant (t)} - \% \text{ Vacant (t-1)}$

The regressions report difference-in-differences with two observations for each

tract, one from 2000 and a second from 2010. In 2000, all tracts are untreated, but in 2010, sixty-four take the value of 1 for the stadium treatment variable. Because of the two observations, fixed effects are included for time as well as for the cities that each tract is located. In a few regressions, either the city or year variable was not statistically necessary and so they were excluded. As was done in the location model, robust standard errors are reported to reduce heteroskedasticity present in the models.

### *3.3.2 Results*

#### *3.3.2.1 Full Sample*

There were two significant findings for the stadium treatment variable in the models using the full sample of cities that hosted minor league teams.

As shown in Table 3.6, the median home prices increased by 20 percent, holding changes in the vacancy rate, the presence of water, and the character of housing one decade earlier constant. In regards to raw dollar figures, the tracts near the new stadium saw increases in their median values by roughly \$34,000 even when accounting for inflation.

Median income increased by 8.8 percent near the new stadium. However, it requires the interpretation of the other control variables to evaluate whether the increase is primarily driven by new residents or increases in wages for existing residents. By including the change in the share of college education and professional workers, both of which are significant, the model indicates that the result for education is not entirely driven by demographic changes. The change in poverty is also significant, which as expected has a large negative effect on median incomes. While all three control variables for changes are significant, the two lagged variables are not.

There were no significant differences in the log of the changes in total housing for areas near the new stadiums for the full sample. Increases in the share of multi-family housing increased the housing stock holding all else constant, which is an intuitive result. Interestingly, the share of vacant housing a decade earlier was positively related to increased construction, holding all else constant. Also of note, areas with a higher share of minorities in the previous decade saw less housing construction.

**Table 3.6 Full Sample Results**

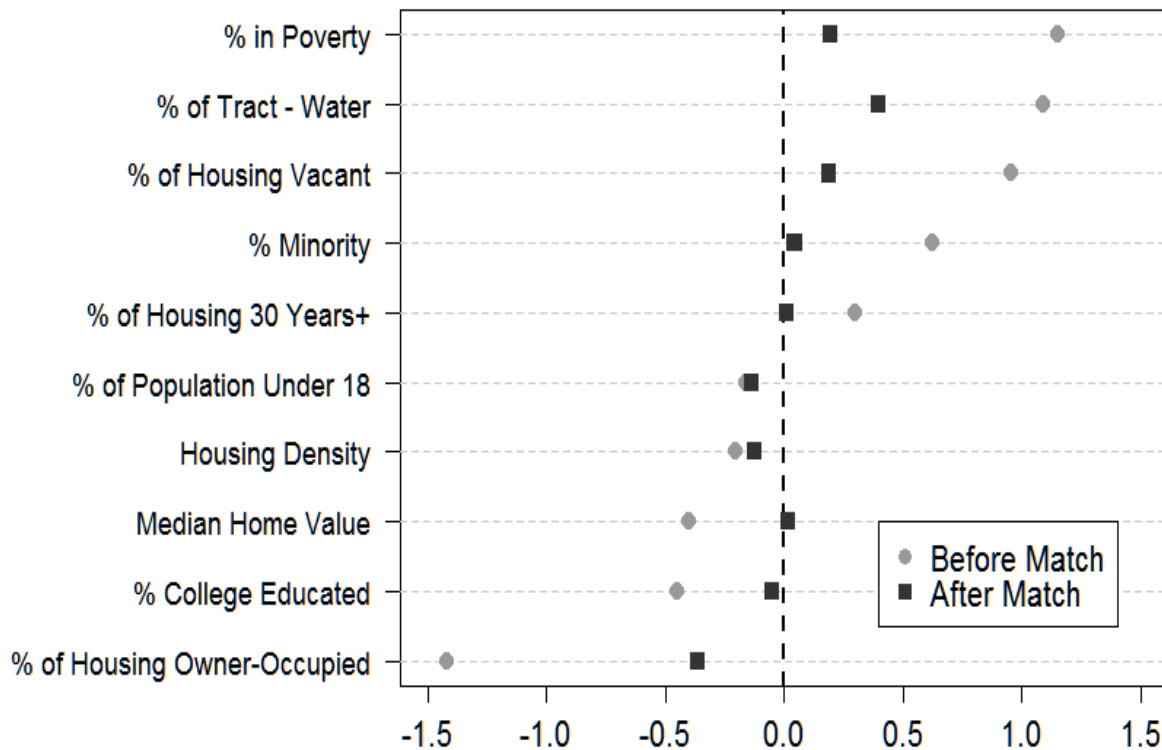
	Median Home Value % Δ		Median Income % Δ		Total Population Log Δ		Total Housing Log Δ		Vacancy Rate Δ %
Stadium Treatment	20.0** (1.21)	Stadium Treatment	8.81*** (2.44)	Stadium Treatment	0.038 (0.035)	Stadium Treatment	0.094 (0.026)	Stadium Treatment	0.21 (0.88)
% Δ in Vacancy	-49.2* (7.35)	Δ in % College Educated	67.1*** (5.94)	Δ in % Multi- Family Housing	0.27*** (0.050)	% Δ in Owner- Occupied Housing	-0.54 (0.19)	% Δ in Population	-2.45 (1.03)
Percent of Tract - Water	40.0* (5.79)	Δ in % Professional Workers	39.6*** (5.19)	Δ in % Unemployed	-0.016 (0.073)	Percent of Tract - Water	-0.023 (0.029)	% Δ in Housing Units	2.38 (0.99)
Lag % Owner- Occupied Housing	-21.6** (0.42)	Δ in % in Poverty	-163*** (4.10)	Lag % Owner- Occupied Housing	0.21*** (0.025)	Lag % of Housing Vacant	-0.27 (0.12)	Lag % Manufacturing Workers	7.50 (4.11)
Lag % of Housing 30 Years+	14.6* (1.93)	Lag % College Educated	-2.68 (2.27)	Lag % Minority	-0.24*** (0.017)	Lag % Owner- Occupied Housing	0.22** (0.011)	Lag % Owner- Occupied Housing	-0.63 (2.91)
		Lag % Manufacturing Workers	-7.98 (7.40)	Lag % of Housing Vacant	0.46*** (0.090)	Lag % of Housing 30 Years+	-0.36*** (0.0055)		
						Lag % Manufacturing Workers	-0.060*** (0.00058)		
Observations	3,451	Observations	3,476	Observations	3,476	Observations	3,476	Observations	3,476
R-squared	0.088	R-squared	0.434	R-squared	0.165	R-squared	0.243	R-squared	0.138
Number of year	2	Number of year	2	Number of year	2	Number of year	2	Number of year	2
Time FE	Yes	Time FE	Yes	Time FE	Yes	Time FE	Yes	Time FE	Yes
City FE	Yes	City FE	Yes	City FE	Yes	City FE	Yes	City FE	Yes
Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes

A new stadium also had an insignificant effect on the log of change in total population, though it was positive for the sample, similar to housing. Areas with a higher share of aging housing stock had a negative association with population changes holding all else constant; that negative result contrasts somewhat with the positive change for housing prices associated with older housing stocks, though the two are not necessarily contradictory. In addition, neighborhoods with a larger share of manufacturing workers in the previous decade saw decreases in their populations.

Finally, stadiums did not have a significant effect on vacancy rates for the full sample. It should be noted that none of the variables included were significant, which is partially driven by the fixed effects and robust standard errors that were included, but also reflects the lack of an effect of the stadium on both housing and population.

#### 3.3.2.2 Matched Sample

Figure 3.1 displays the improvement in similarity between the treatment and control group after using propensity score matching. For each variable, the initial and final standardized difference is displayed on the x-axis; the movement towards zero for all variables is indicative of the matched samples advantage despite its imperfections. The probability that the treatment and control group in the full sample are similar on the variables used to model stadium location is less than 1 in 10,000; using propensity score matching at a 5-to-1 ratio raises the probability to .148.



**Figure 3.1 Standardized Differences.**

When the sample is limited to a pool of similar tracts, the stadium treatment variable is significant in three regressions as shown in Table 3.7. As was the case with the full sample analysis, there are significant differences in the changes for the median home values and the median incomes between tracts near stadiums and throughout the rest of the city. However, the significance for median income only reaches the .10 level in the matched sample. In addition, the change in housing units gains significance and is in the expected direction when using the matched sample.

**Table 3.7 Matched Sample Results**

	Median Home Value % Δ		Median Income % Δ		Total Population % Δ		Total Housing % Δ		Vacancy Rate Δ %
Stadium Treatment	25.2*** (0.14)	Stadium Treatment	7.25* (0.87)	Stadium Treatment	4.38 (3.97)	Stadium Treatment	7.62** (0.29)	Stadium Treatment	-0.71 (0.14)
% Δ in Vacancy	-37.1 (8.95)	Δ in % College Educated	17.5 (21.8)	Δ in % Multi- Family Housing	34.4 (26.6)	% Δ in Owner- Occupied Housing	-33.9 (39.1)	% Δ in Population	-18.9* (1.59)
Percent of Tract - Water	19.0** (0.76)	Δ in % Professional Workers	54.2 (19.9)	Δ in % Unemployed	-7.34 (18.5)	Percent of Tract - Water	27.7 (5.09)	% Δ in Housing Units	17.2* (2.47)
Lag % Owner- Occupied Housing	-20.8 (43.3)	Δ in % in Poverty	-189* (20.9)	Lag % Owner- Occupied Housing	13.8* (8.33)	Lag % of Housing Vacant	-34.8* (4.08)	Lag % Manufacturing Workers	6.83 (4.95)
Lag % of Housing 30 Years+	33.2 (7.39)	Lag % College Educated	-7.44 (21.2)	Lag % Minority	-32.3*** (5.52)	Lag % Owner- Occupied Housing	23.4 (13.1)	Lag % Owner- Occupied Housing	1.03 (2.48)
		Lag % Manufacturing Workers	-29.2 (15.7)	Lag % of Housing Vacant	21.8 (20.2)	Lag % of Housing 30 Years+	-40.8 (9.72)		
						Lag % Manufacturing Workers	-24.0 (36.1)		
Observations	746	Observations	768	Observations	768	Observations	768	Observations	768
R-squared	0.057	R-squared	0.455	R-squared	0.193	R-squared	0.193	R-squared	0.336
Number of year	2	Number of year	2	Number of year		Number of year	2	Number of year	2
Time FE	Yes	Time FE	Yes	Time FE	No	Time FE	Yes	Time FE	Yes
City FE	Yes	City FE	Yes	City FE	Yes	City FE	Yes	City FE	Yes
Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes



Several control variables lose their significance across the regressions, though in fewer cases do their direction change; making the control and treatment group more similar has, as was intended, helped to diminish the effect of the differences in these qualities. However, the continued significance of several variables supports the continued use of the full model.

The only covariate other than the stadium treatment that retains a significant effect on median home prices is the presence of water, and in the matched sample it reaches a higher level of significance. For median income, the significant effect of changes in education and professional employment are lost, though this is largely driven by growth in the standard errors rather than a decline in their magnitude. For income, changes in poverty is the only variable that is significant. With regard to residential housing vacancy, two variables gain significance that did not in the full sample; as expected, an increase in housing or increase in population, holding all else constant, is associated with an increase in residential vacancy rates; however, both are only significant at the .1 level.

### 3.3.2.3 Non-Facilities Sample

Finally, I evaluate how well tracts near the stadiums performed in comparison to similar tracts in other cities that did not build a facility for a comparable professional team. Of immediate note in Table 3.8 is that the effects of stadiums on both median home values and median income disappears. While these tracts grew faster when compared to their own cities, there are no significant differences present when compared against cities without facilities. In particular, in the final sample tracts near the stadium grew less slowly than the control group, though these differences do not reach statistical significance.

**Table 3.8 Non-Facilities Sample**

	Median Home Value % Δ		Median Income % Δ		Total Population % Δ		Total Housing % Δ		Vacancy Rate Δ %
Stadium Treatment	-10.7 (1.19)	Stadium Treatment	4.18 (6.13)	Stadium Treatment	6.52 (5.49)	Stadium Treatment	18.4*** (5.18)	Stadium Treatment	2.03* (0.24)
% Δ in Vacancy	75.3 (30.2)	Δ in % College Educated	31.8 (26.2)	Δ in % Multi- Family Housing	23.9 (15.8)	% Δ in Owner- Occupied Housing	-49.4** (20.4)	% Δ in Population	-7.84 (2.41)
Percent of Tract - Water	-4.49 (8.60)	Δ in % Professional Workers	54.0*** (17.0)	Δ in % Unemployed	-45.5*** (16.8)	Percent of Tract - Water	3.98 (15.6)	% Δ in Housing Units	9.16** (0.40)
Lag % Owner- Occupied Housing	35.7 (66.3)	Δ in % in Poverty	-221*** (15.0)	Lag % Owner- Occupied Housing	28.5** (11.9)	Lag % of Housing Vacant	-14.6 (21.1)	Lag % Manufacturing Workers	7.58 (9.63)
Lag % of Housing 30 Years+	58.0* (15.2)	Lag % College Educated	11.5 (18.9)	Lag % Minority	-11.5 (9.05)	Lag % Owner- Occupied Housing	32.4*** (11.6)	Lag % Owner- Occupied Housing	2.81 (2.39)
		Lag % Manufacturing Workers	-30.7 (27.9)	Lag % of Housing Vacant	11.9 (22.1)	Lag % of Housing 30 Years+	-11.7 (9.00)		
						Lag % Manufacturing Workers	-51.1* (27.01)		
Observations	372	Observations	384	Observations	384	Observations	384	Observations	384
R-squared	0.265	R-squared	0.543	R-squared	0.648	R-squared	0.759	R-squared	0.249
Number of year	2	Number of year	2	Number of year		Number of year		Number of year	2
Time FE	Yes	Time FE	Yes	Time FE	No	Time FE	No	Time FE	Yes
City FE	Yes	City FE	Yes	City FE	Yes	City FE	No	City FE	Yes
Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes	Robust SE	Yes

Two variables for the stadium treatment do reach or exceed .1 levels of significance though. Similarly, to the matched sample, the change in total housing is significant and is shown to increase for the treatment group. Relative to tracts in other cities, housing near the stadium grew 18 percent faster.

The second significant treatment effect is for residential vacancy rates. While vacancy rates did not differ between the treatment and control in either sample from cities hosting teams, they increased near the stadium relative to other cities. Because the difference in the change in housing is larger between the treatment and control group for the final sample, with again no significant changes in the population, it is predictable that we would observe a rise in the vacancy rate

### **3.4 Summary**

The quantitative analysis evaluated minor league baseball stadiums within the Special Activity Generator framework. First, the findings indicate that stadiums do locate in areas characterized by blight. Furthermore, the areas that stadiums are placed in were not improving prior to the stadiums arrival.

Analyzing the changes in those areas one decade after stadiums opened, there was a significant increase in median home values, median incomes, and new housing construction relative to similarly blighted tracts in the same cities. However, in comparison to a sample of cities that built no stadiums during the study period, most of the significant effects were not present. Specifically, the magnitude for the positive effect of stadiums on housing construction increased, and there was also an increase in the residential vacancy rates in those communities.

In Chapter 4, case studies are used to help explore several questions left by the

quantitative analysis. In particular, the study of particular cities will allow me to test the assumption that the stadium should be credited with the total effect of the change in the area. In addition, the case studies will allow for a further testing of the Special Activity Generator framework because of the ability to use new data to track the blight, vitality, and secondary developments around stadiums.

## **CHAPTER 4**

### **CASE STUDIES**

Chapter 4 is comprised of three parts. In the first section I review the methodology used in both case studies, specifically the sources and collection of data. The second and third sections discuss the two cases of Toledo, Ohio and Louisville, Kentucky individually. I analyze first how each city evolved and declined, then the more specific status of the neighborhoods prior to the stadiums opening, before analyzing the changes since the year 2000. With the total scale of the change addressed, I examine what share of the resulting redevelopment should be attributed to the stadium and whether or how the cities have been able to attract secondary investments. In Chapter 5, I compare the two cities and address how the cases help to inform the quantitative analysis in Chapter 3.

Both cases provide evidence of the impact a stadium can have as a catalyst of urban redevelopment, but perhaps more importantly, they also show the limitations of such public investments. Alone, a minor league baseball stadium will not revitalize a city, but if paired with an intentional strategy and co-located with additional amenities, it can be part of a successful transformation of urban neighborhoods.

#### **4.1 Research Methodology**

Chapter 3 measures the total effect of a stadium on surrounding neighborhoods, but is unable to identify the exact role of the stadium in ancillary investments. Case studies can better analyze the importance of the minor league stadium to the resulting redevelopment outcome. An important assumption of the Special Activity Generator framework is that stadiums act as a catalyst to further development by directly attracting

private investment into the area. More specifically, in Chapter 3 I hypothesize that stadiums have a significant and direct effect upon the attraction of private investments into the area, justifying my attribution of the total effect of redevelopment to their presence. With the case studies, I will attempt to isolate the direct and indirect effects of the stadium on urban redevelopment based on a combination of archival and interview data.

I selected two case studies from the sixteen stadiums built in urban locations across the country between 1998 and 2002 used in the quantitative analysis in Chapter 3. The reason for using those stadiums is partially practical, because it allows me continued use of pre- and post-treatment data to identify which stadiums were most and least successful as redevelopment projects. In addition, it forms a direct link between the two analyses, allowing further insight into the reasons that stadiums built around the year 2000 were able to concentrate redevelopment, as shown in Chapter 3.

I used two cases studies to analyze cities with results at opposite ends of the sample, in order to consider the causes and nature of different outcomes stemming from similar projects. The sixteen stadiums were evaluated using an index constructed out of the LTDB data and five variables that proxy for aspects of the redevelopment process identified by the Special Activity Generator framework as outcomes of successful projects: population, median rent, housing units, vacancy rate, and median income.<sup>24</sup> For tracts marked as treated in Chapter 3, each of the five variables is converted to the percentage change in order to see how each individual tract has transformed relative to

<sup>24</sup> An earlier version of the evaluation used median rent instead of median housing prices, so that was used in the index construction and the section of case studies. Median rent was retained for the case studies because two tracts in Toledo had zero owner-occupied houses and therefore did not have data available for housing prices. Median rents and median housing prices are correlated at .7 across the data used.

their different starting positions. The changes for each tract were then summed for the stadium and averaged for the number of tracts before being converted into z-scores. Finally, the five numbers were combined into an index and given equal weight; the index can be found in Appendix C.

I use an explanatory comparative case study, relying on multiple types of data to triangulate the impact and importance of the stadium on urban redevelopment. The unit of analysis for my case studies is the neighborhoods surrounding minor league baseball stadiums. I employ the same boundaries as I used in the quantitative study, specifically census tracts with centroids within 1 mile of the stadium.

I use archival data, observations, and interviews as part of the study. The primary source of data used for the case studies is interviews I conducted during the spring and summer of 2016 with residents of both cities. During the interviews, I spoke with a mix of government officials, developers, city residents, nonprofits, and business owners to gain a comprehensive understanding of the stadiums' effect.

Government officials were asked to comment on the process of building the stadium and particularly the intentions of the project. In addition, officials could also discuss the economic growth patterns for the city and region and identify any challenges or obstacles for the future. I identified government sources by researching the relevant agencies that worked with economic or urban development in both cities and sent email inquiries to either specific officials or the agency in order to schedule appointments.

Developers were identified through news queries to locate stories about commercial or residential projects in both cities. I asked developers to comment on the practice of determining their investment locations, the process of working with city

officials, and their observations regarding the changes in the urban cores of the city.

I also spoke with nonprofits or non-government organizations in both cities, particularly those working in housing and redevelopment issues. Nonprofits provide a nuanced view of the impacts of redevelopment and particularly the differential effects throughout the city. Nonprofits were identified through web queries using key words and the names of both cities.

Business owners were primarily identified through newspaper searches about the redevelopment of both cities. In addition, contacts were made during the visits in both cities as part of the observation process. Business owners were queried on the success of their projects, the changes in the neighborhood, and the rate of change among nearby businesses.

Finally, I also spoke with individuals that are best identified as city residents, who could comment on the redevelopment from a civilian perspective without a direct investment in the changes. Through the observations I was able to meet and interview a mix of long-time residents and recent arrivals in order to gain a broad understanding of their views.

In total, I spoke with thirty-seven individuals, of which twenty were from Toledo and seventeen were from Louisville. Across the core research topics of the study, theoretical saturation was achieved as codes appeared across conversations and groups. I protect the anonymity of my respondents when quoting them by only identifying them by which of those five groups they are most strongly associated with for the research; for example, whether they are a developer from Louisville or a government official from



Toledo.<sup>25</sup>

Interviews were recorded and transcribed, allowing for accurate reproduction of their quotes. I first coded the interview data to explore common themes across the responses. The same set of initial codes was used for both cities; while many of the codes were determined prior to the beginning of field research, questions were allowed to evolve and new codes were introduced, both during the study and in the processing of data afterward to best represent new insights and information gleaned from study. While the interviews were semi-structured, several questions were asked in all interviews regardless of the location or participant. One relevant concern for this research would be the presence of socially desirable answers; if I asked respondents directly about the effect of the stadium I may have produced an inflated perspective of the project's impact. However, I attempted to not ask about the stadium until respondents brought it up themselves in discussing the general changes in downtown, and so I was able to query both the stadium's role and its relative importance to other projects. The guiding questions I asked across interviews can be found in Appendix D.

While visiting the cities to conduct interviews, I was also able to observe the stadium and experience the neighborhoods I was studying. These observations come from multiple visits at different times of the year, both during and outside of the team's season. In addition, I observed the neighborhood on game days and nights, as well as on dates and times the team was not playing. The way that the stadium is used by residents and visitors at all these points is indicative of its contribution to redevelopment, with the

<sup>25</sup> Obviously there is room for overlap between the categories. For instance, a government official could easily be a business owner and a citizen of the city. For purposes of the research, I use their position as it relates to the way that I identified them as being of interest to the research.

anticipation that areas with more uses outside of the team's season will have been more successful. I recorded my field observations nightly and coded them with the same categories used to analyze the interview data.

I also utilize archival data, to corroborate the opinions of residents as well as to explore differences between the two cases. The first source of archival data is census data, used to identify the spatial impact of the stadium in each city and to provide an enhanced understanding of the city's redevelopment trajectory. I utilize the same census data analyzed in Chapter 3 to further evaluate the changes in both cities, as well as more recent data from the 2015 American Community Survey to explore changes since the last decennial census and better reflect the present standing of the neighborhoods.

Data from the Census Bureau from the Economic Census is used to study employment changes in the area surrounding the stadium. The Economic Census is conducted every five years and publishes data on occupation types and earnings for zip codes. Zip codes are highly irregular, making its use across a national sample difficult, but for case studies it can provide an understanding of what types of businesses entered the area surrounding the stadium and with a small sample can be approximated to census tracts.

Finally, newspaper stories and planning documents were also reviewed. These sources were primarily used to confirm the reports of respondents and to grasp the timing of changes as they occurred over the past fifteen years. However, their availability was inconsistent and their data overlaps with what was collected from interviews so they are not used as systematically as interview data in the reporting of results.

## 4.2 Case Study of Toledo, Ohio

### 4.2.1 Introduction

Toledo is a blue-collar town located in northwest Ohio, bordering Lake Erie and the state of Michigan.<sup>26</sup> It was long a manufacturing hub, with important ties to Detroit and the automotive industry because of its strategic location for the production of complementary products, but also because it was connected directly to St. Louis and New York by rail. At its peak, glass was the city's most prominent industry, which provided Toledo its nickname "Glass City" as well as the funding for many of its civic assets and downtown architecture.

When the Fortune 500 list debuted in 1955, the Toledo region hosted six of the firms named by the magazine, but the success and vitality of the mid-century has not been experienced since. Like other Midwestern cities wedded to a single industry, the Toledo region declined during the 1970s and 1980s as a result of industrial restructuring, and the city was particularly hard-hit with the relocation of major employers. The period of downturn has had a lasting effect on Toledo and their attitudes towards the city. One long-time resident reflected, "We [Toledoans] historically have this negative view of ourselves. That might stem from a period where we had a bunch of fortune 500

26 From 1835 to 1836, the state of Ohio and the future-state of Michigan fought over the city of Toledo in The Toledo War (or the Michigan–Ohio War). The dispute started because of conflicting understandings of the geography surrounding the Great Lakes as Michigan applied for statehood. Both states continued to claim control over the city and surrounding area, and in order to enforce their claims sent competing militias to positions on opposite sides of the nearby Maumee River. The "war" mostly consisted of taunting between the two militias, with the only confrontation involving the firing of shots into the air and zero casualties. Congress proposed to resolve the stalemate with Michigan receiving the Upper Peninsula in exchange for ceding Toledo to Ohio; at the time, the deal was popularly thought to be skewed in Ohio's favor, and Michigan's voters rejected the proposal. However, that compromise was later imposed by President Andrew Jackson, and the subsequent discovery of copper and iron in the Upper Peninsula meant the deal may have actually favored Michigan (Faber, 2008)

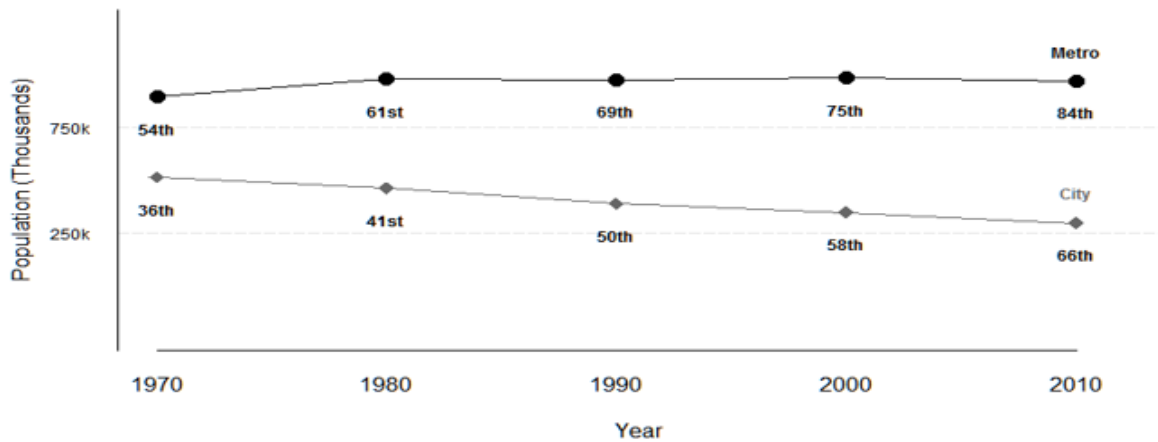
companies that left, and you still find people complaining about that. That happened 35 years ago!” [Toledo C, resident].

What is notable, in conjunction with Toledoans’ sense of negativity, is their concern with missed opportunities in the past. For instance, respondents discussed that the city was nearly the automotive capital instead of Detroit because it was once considered as Henry Ford’s base of operation. That was in addition to a fixation on the populations of other cities and the fact that Toledo had a population equal to Atlanta’s as recently as 1950 or that “In 1900, Toledo was bigger than Detroit” [Toledo Q, nonprofit] (which is incorrect). Perhaps the visions of grandeur emanate from Jessup Wakeman Scott, who wrote in 1874 that Toledo would be the “future great city of the world.”<sup>27</sup> It leaves the city with a strange cocktail of skepticism, visions of grandeur, bitterness, decline, and past success that make it difficult for the city to move forward, for every plan falls short of their past aspirations.

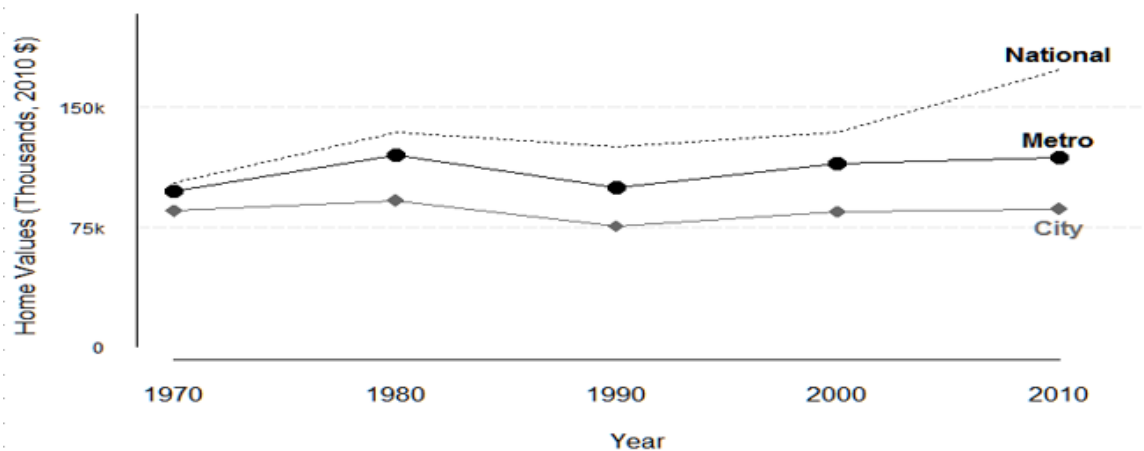
Toledo’s central business district followed a trajectory similar to other American cities throughout the Rust Belt. As businesses moved out of the city to the Sunbelt or the suburbs, residents relocated in turn. While the metropolitan area’s population grew slightly after 1970 as shown in Figure 4.1, the city itself declined from 380,000 residents in 1970 by nearly a quarter in the 2010 census. The region’s population remained largely stable across the 40 years shown, which makes the shift in population starker. While the raw numbers themselves speak to the city’s waning, Toledo’s decline is more fully captured by its rank among all cities and metropolitan areas in the country. While in 1970

27 This was not a unique position for a land booster like Scott to take; after all, to just take one example, Uriah Reavis published *Saint Louis – The Future Great City of the World* in 1875. However, these views appear to have filtered into the collective milieu of the city, though mixed with recent failures.

Toledo was the 36th largest city and the 54th largest metro in the country, it had fallen to 66th and 84th by 2010.<sup>28</sup> Similarly, Figure 4.2 shows Toledo's housing prices stagnating, particularly as they lag further behind the nation between 2000 and 2010. In addition, the metro and city median home prices were far closer in 1970 than 2010, displaying that the relative value of living in the city fell relative to the suburbs.



**Figure 4.1 Toledo, Oh: Population (and National Rank)**



**Figure 4.2 Toledo, OH: Median Home Values**

28 Had the city's population remained the same through all forty years, the metro still would have lost ground in the national rankings, falling from 54<sup>th</sup>, to 60<sup>th</sup>, 61<sup>st</sup>, 69<sup>th</sup>, and 73<sup>rd</sup> with each subsequent census.

During the 1980s and 1990s Toledo's government and private investors made efforts to redevelop downtown and prevent further population losses. The most significant initiative was the Portside Festival Marketplace, which opened in 1984 as the "crowning jewel of Toledo's new downtown" (Yonke, 2015). Portside connected the past and future for Toledo as it was situated on the former site of Tiedke's, a landmark retail store that had opened in downtown Toledo at the turn of the 20<sup>th</sup> century until the loss of downtown residents and growth of suburban shopping forced its closure. Portside was intended as more than a mall, featuring event space, upscale shops, and restaurants, but ultimately was unable to stem the losses to the suburbs and closed completely after only 6 years. One long-time resident remembered it with a sense of melancholy:

We had wonderful shops. There was even a great Brooklyn fish market over there. At noon you don't buy fish and put it in your desk drawer until 5:00 at night and go home. That was one of the first shops to close... Everything was going great. We had tenants coming into the building and then Portside closed. That was just like a faucet getting turned off. The whole downtown kind of stagnated at that point. Not completely, but Portside was a big attraction and when it closed it really did leave a void plus the fact that there was a huge buildup [Toledo P, nonprofit].

The decline of Portside harmed downtown Toledo, but it was part of a broader trend of despair and pessimism for the city. In particular, the savings and loan crises in the 1980s severely affected the city's prospects of putting additional investments in alongside Portside:

Toledo in the 1990's had suffered a major Metropolitan scandal in the 80's when credit unions failed and you'll have to check the number, but I think there was some \$70 million in downtown Toledo development that tanked. [Toledo I, resident].

These failures have had a continued effect on the city, particularly as the Great

Recession set in:

"We felt we were taken under the chin for a while, we could not bank on things that we didn't have any power to control. Because it was the savings and loan debacle in the 80s that put us back on our heels again. Then it was the mortgage debt and so forth with the banks ... We didn't really have that many underwater houses because our mortgages are not that high here, but we were getting hurt bad and it was not from things that we had any control of" [Toledo H, government].

The loss of retail and closing of Portside does not mean that Toledo as a city does not possess anchors or attractions. However, they are not positioned centrally enough to stabilize downtown. For example, Toledo has the top-rated zoo in the United States according to USA Today's 10 Best Readers' Choice Contest,<sup>29</sup> but it is located roughly three miles from downtown. The University of Toledo is a Tier 2 national university with a total enrollment of roughly 20,000, which could add vitality and activity to the central business district, but it is located about 4 miles away. The city's century-old art museum, created with an endowment from leading glass industrialist Edward Libbey, remains free to the public but it is located roughly two miles from the central business district and on the fringes of downtown. While other arts venues, like the opera and performing arts, are still located downtown the city's strongest assets add to the dispersal of the region.

The lack of entertainment options was reflected in my interviews, particularly with young adults who grew up in Toledo during the 1980s and 90s.<sup>30</sup> Despite the attempts at investments in projects like Portside, downtown was not a place that people came:

<sup>29</sup> This is not meant to be taken as a rigorous ranking of the zoos, but it does provide some insight towards its standing in the country. <http://www.usatoday.com/story/travel/destinations/2014/05/21/10best-readers-choice-best-us-zoo-winners-announced/9331483/>

<sup>30</sup> John Denver wrote a song after spending a Saturday night in Toledo, Ohio during the early 1970's titled appropriately enough "Saturday Night in Toledo, Ohio" It begins "Saturday night in Toledo, Ohio is like being nowhere at all."

When I was in high school when you came downtown you really just came downtown to basically cut through to go to our sports arena which was on the other side of the river. There really wasn't another reason. If you didn't work down here there wasn't a lot of reason to come down, maybe something at the Seagate Center occasionally. Where the stadium is located now was actually mostly strip clubs [Toledo G, government].

Or as Toledo B, who grew up in the region and returned after college to raise a family, described it: "when I was growing up you didn't go downtown for anything. People went downtown only if this is where you worked. There was nothing to do. There were not activities. Everything was abandoned around here. Unless you worked here, you literally had no reason to go downtown." It was not just safety concerns that kept people away, it was a distinct lack of choices in amenities: It's not that I didn't feel safe. I just didn't like to do it. There just wasn't anything to come down here for other than to go out at night and that was it. There weren't a lot of restaurants here... Growing up, we never came downtown" [Toledo N, government].

Toledo's downtown and the city face many burdens, some that are psychological and others that are practical. One burden of the city is its own legacy, which makes its continued decline even starker in comparison to the heights it once reached and for which it still pines. Another burden is past failures. The loss of major employers, the downfall of Portside, and the savings and loan crises left a heavy pessimism in the city. Further, the savings and loan crises dried up funding for redevelopment for over a decade. With Portside's failure and a lack of money to invest in other projects, individuals did not have a frame of reference for coming downtown. There was also a lack of faith in government officials throughout the interviews; as long-time resident Toledo I complained,



“the city has a history of its leaders putting themselves before the community and being scoundrels and padding their own individual or corporate accounts more than certain public interest.” Or, as Toledo T said, “Getting any positive response out of city hall is near impossible... they owe everything to the unions, which slows everything down.”

The built environment was a large obstacle to successful redevelopment as well. Thirty-five percent of downtown Toledo is currently parking lots<sup>31</sup> and of the commercial real estate, estimates for the vacancy rates in the 2000s were around thirty percent (Deeter, Shetty & Reid, 2015). Individuals or consortiums that live or are based outside Toledo, who own many of the vacant properties, have not been motivated to either maintain or sell their properties:

"A big problem we have is bad property owners, and they're bad property owners for a number of reasons. Choose your factors. They inherited the property, they're not from here, they have plenty of other properties in their portfolio that are worth way more so they don't really care about this one, or they're making passive income on them already that covers their costs" [Toledo C, resident].

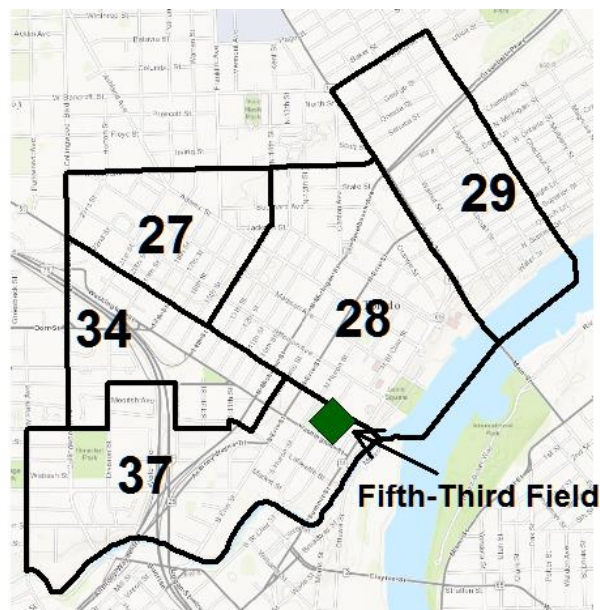
The local government has limited means to take over the properties as the owners wait for offers that match their expectations: “The county and city have tried to take those buildings on multiple occasions because they won’t pay their property taxes. When they get to a certain point and they take them to court to try and overtake they miraculously come up with hundreds of thousands of dollars to pay for the taxes" [Toledo G, government]. The second tallest building in the city, the

31 I estimated the percentage of downtown Toledo’s surface area that is parking lots manually. I collected a map of parking provided by the city, and estimated the amount of space that was covered by parking lots and garages.

Fiberglass Tower, matches this description as it is owned by an individual from Grand Rapids, Michigan and has sat vacant since 1998 until a recent effort to redevelop it began (Victor, 2016). Toledo has a large downtown built to accommodate a booming industrial city, which modernly leaves vast swathes of the city empty and lifeless space. The enormity of the problem led Toledo to believe that it needed a large project to revitalize its downtown

#### *4.2.2 Overview of Neighborhoods Prior to Stadium Opening*

The treatment area in Toledo included five census tracts that comprise parts of four neighborhoods (see Figure 4.3 below). Tract 28 covers the central business district for Toledo, though it also includes parts of the adjacent neighborhood of Uptown. The remainder of Uptown is in Tract 27. Tracts 37 and 34 comprise what is known as the Warehouse District, where the stadium is physically located. Finally, tract 29 is located in North River, which is part of the urban core but lays at the periphery of downtown.



**Figure 4.3. Toledo Treatment Area**

**Table 4.1. Description of Tracts Treated in Toledo**

Tract	Neighborhood	Description
27	Central Business District/Uptown	Mix of residential and commercial space
28	Central Business District	Mix of residential and commercial space, employment center for the city
29	North River	Primarily residential housing
34	Warehouse District	Mix of residential and commercial space
37	Warehouse District	Mix of residential and commercial space

The central business district was the traditional center of employment and retail in the first half of the 20<sup>th</sup> century, and still bears many historical structures and landmarks, though many were torn down between the city's best years and today. The Uptown neighborhood grew as a residential area while downtown was expanding early in the century, though it also encompasses large sections of commercial property as well. The warehouse district, where the stadium is located, houses little of the city's history, as it transitioned from an industrial area with numerous warehouses, into underdeveloped commercial spaces:

The interesting thing about the Warehouse District is it never, it was always a blank slate because it was very literally a warehouse district. It was never a residential neighborhood, it was just storage and shipping. You have all these big empty buildings that were ripe for galleries or loft apartments [Toledo A, nonprofit].

**Table 4.2. Pre-Treatment Status of Toledo Tracts (percentiles in parenthesis)**

Rent	Income	Housing	Population	Vacancy
\$489 (19th)	\$16,680 (6th)	600 (4th)	530 (1st)	33% (100th)
\$456 (43rd)	\$15,373 (4th)	596 (3rd)	1,145 (3rd)	18% (96th)
\$197 (3rd)	\$11,716 (1st)	1,348 (48th)	2,240 (20th)	13% (76th)
\$228 (4th)	\$15,823 (5th)	363 (2nd)	770 (2nd)	14% (79th)
\$184 (2nd)	\$12,875 (3rd)	706 (7th)	1,500 (4th)	4% (23rd)

The census data shown in Table 4.3 supports the description of the Warehouse District as “a blank slate” prior to the stadium’s arrival. All five tracts were in the lowest percentiles for the number of housing units, income, and population in the city. Two tracts, 28 and 27, show some separation in terms of their median rent, but are still beneath the 50th percentile for the city. The higher median rents in those tracts may also help to explain why they have the highest and fourth highest vacancy rates in the city. Taken that these tracts comprise a large swath of central Toledo, one can appreciate the concern of city officials and the view that urban redevelopment was necessary.

#### *4.2.3 After the Stadium Opened*

In 2002 Toledo opened Fifth-Third Field to host the Toledo Mud Hens.<sup>32</sup> The stadium cost \$52.29 million (in 2016 dollars) to open and was financed primarily by the team and Lucas County; the county retained ownership of the facility, and have a lease with the team. The Mud Hens has remained popular locally, with attendance over 500,000 every year the since opening. In fact, the team has only fallen short of their attendance from the stadiums opening season (547,204) in one season (2003).<sup>33</sup> In 2015, the Toledo Mud Hens finished seventh out of twelve in attendance for the International league, despite having the smallest stadium capacity in the league.

Fifth-Third Field had not successfully redeveloped the five tracts lying within one mile one decade later according to the census data shown in Table 4.3. Three of the tracts saw declines in their median rents and four saw decreases in their median incomes. By

<sup>32</sup> The team has national notoriety because of the television show MASH. Jaime Farr, who played Maxwell Q. Klinger, was a native of Toledo and he would often wear Mud Hens hats and jerseys on the show. Because of that historically oddity, Toledo has one of the best known mascots in the country.

<sup>33</sup> Attendance figures provided by the team

2010, new housing construction had not begun consistently as in three cases the housing stock had decreased. There were substantial decreases in the vacancy rate for two tracts, but in three others, they rose. Tract 28, which covers the central business district, saw the largest sign of redevelopment and had positive results in all categories except vacancy rates.

**Table 4.3 Percent Changes in Treated Tracts since 2000**

<b>Neighborhood</b>	<b>% Change Median Rent</b>	<b>% Change Median Income</b>	<b>% Change in Housing</b>	<b>% Change in Population</b>	<b>Change in % Vacant</b>
CBD/Uptown	13.8%	-6.5%	-2.3%	31.7%	-15.8%
CBD	9.7%	44.9%	19.1%	21.7%	4.2%
North River	-13.4%	-43.7%	-14.5%	-32.3%	9.5%
Warehouse	-6.5%	-39.2%	-3.6%	-7.0%	-14.0%
Warehouse	-1.4%	-36.9%	6.2%	-1.7%	1.4%

Despite what the Census data indicates, there was a broad consensus across participants that the stadium had contributed positively to redevelopment in Toledo, particularly in the Warehouse District. A government official described the stadium as “having brought people back downtown” [Toledo N]. The stadium was important even though “The [Mud Hens] is an event that happens for 4 months of the year...” all year long “You’ve got an anchor there to build off of and work with” [Toledo O, nonprofit]. One long-time resident of the Warehouse District described the redevelopment of the neighborhood as being “very slow, very slow, very slow until the Mud Hens came down. That announcement was turning the faucet back on... They’ve been a catalyst. There’s no getting around them” [Toledo P, nonprofit]. Or as one participant described the change:

“It took a while. There were lots of theories about what was going to happen. And skepticism about what was going to happen and it was slow coming. I tell people all the time I think that is what has made the warehouse district successful” [Toledo R, government].

Much of the credit for the increased positivity towards downtown’s future is directed towards Fifth-Third Field: “A lot of this stuff would not be happening. There's no doubt that the Mud Hens have been a significant driver. We wouldn't be where we are if it wasn't for them" [Toledo A, nonprofit] or that "Fifth Third Field sparked the catalyst of change down here. The number of businesses, I think there were two. Now, there's twenty-five to thirty within a two-block radius of the ballpark that have opened up in the last fifteen years" [Toledo B, business].

The difference in opinions between residents and the census data may be explained the fact that the Census data reviewed is from 7 years ago while I am speaking to residents and observing the neighborhoods at present. On that point, one resident expressed that, "My personal opinion is that the Mud Hen stadium has had a tremendous impact on downtown's renaissance, but it's really not taken hold until the culture and the momentum was there to really appreciate that benefit. It's only been the *last 5 years* [emphasis added], really, that's dramatically changed the Warehouse District.” [Toledo R, government]. However, they went on to say:

Whether that was a direct cause and effect or whether it was just part of being at the right place at the right time to now start building on those influences. The millennials want to be downtown. They care more about transportation and not about cars. They want some sort of sense of community like you're talking about. I don't know whether the Mud Hens caused that. Maybe. A little bit certainly. There are 500,000 people that come downtown that didn't come downtown before. They experienced it. They felt something different. They had a sense of pride.

However, even a longer time horizon than was used for Chapter 3 does not produce a picture of urban redevelopment in downtown Toledo. Much of the perceived change in the Warehouse District is simply not borne out in the data shown in Table 4.4.

**Table 4.4 Changes in Downtown Toledo 2000 to 2015**

	Median Rent % Change	Median Income % Change	Housing % Change	Population % Change	Vacancy Rate % Change
27	-9.8%	-46.8%	-2.7%	99.1%	-87.9%
28	-14.7%	-42.3%	32.0%	33.6%	-22.2%
29	-23.9%	-24.3%	-13.5%	-28.4%	53.8%
34	-17.1%	-43.9%	6.1%	18.3%	-28.6%
37	56.0%	-31.1%	-6.4%	-17.5%	300.0%

According to attendance figures, residents are correct that the ballpark has been bringing hundreds of thousands of visitors to the area, many of which otherwise would not have been there, adding activity that is hard to dismiss. However, such activity may simply have not had the durable effects on the neighborhoods status that they perceive. As one (failed) business owner in the area explained, “there was, probably, a spike of activity and interest and excitement, right when we opened and then it pattered out for a few years... We thought that the neighborhood could sustain [our business]. We were wrong, but, yeah, that's what. I think, there just weren't enough people there yet” [Toledo M].

Thus, the perception of success may be more mental than physical. One respondent questioned the physical impact of the stadium to that point, but conceded that, "What it does is create... good will in the community" [Toledo O, nonprofit]. For a city with negative perceptions of itself, good will can be valuable. They went on: "Baseball

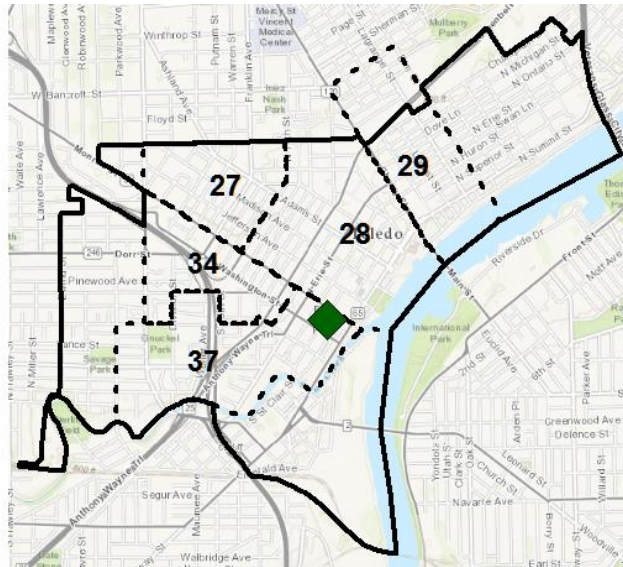
stadiums are a lot more than just the development, they're about the community, belief, and things like that" [Toledo O, nonprofit]. Another government official [Toledo R, government] said they "think downtown's on the verge, like I said before, I think we're on the verge to do some really great things and I think the Mud Hen stadium was a key piece of that. Very key piece of that. For them to have the foresight or the political will or whatever to achieve that was terrific." The building of the stadium "legitimizes things that go on down here" because even for people that don't attend the games the fact that "the baseball team chose to be here so it makes them say, 'Well I think downtown is a waste and I think it's going to fail but they must see something in it'" [Toledo F, developer].

It is not simply the perception of the resident's that within a few blocks of the stadium there are more businesses open now than there were when the stadium opened. Economic Census data shows elements of the changes in downtown Toledo that residents noticed and were apparent while observing the city. Figure 4.4 shows how Fifth-Third Field's zip code approximates to the five treated tracts while Table 4.5 displays the change in establishments for the area in two broad categories: Accommodation and food services, as well as Arts, entertainment, and recreation.

**Table 4.5 Economic Census Data for Toledo**

Category	2002	2007	2012	Change 2002-12
Arts, entertainment, and recreation	6	9	9	50.0%
Accommodation and food services	38	67	59	55.3%





**Figure 4.4 Treatment Tracts to Zip Code 43604**

Between 2002 and 2012, there were increases in both categories with the number of restaurants showing more substantial growth. While the stadium has not had the broad effect on redevelopment expected, the increase in activity is a positive sign that is visceral and immediately apparent to residents. And from observation, the growth in restaurants is highly clustered within the area immediately surrounding the stadium. Toledo's stadium deserves credit for the growth of restaurants and shops within those few blocks because without the stadium, there would be no reason for that type of cluster to form.

In addition, Fifth-Third Field has directly led to more recent ancillary developments in the area. In the summer of 2016, the Toledo Mud Hens opened Hensville, a set of restaurants and event space opened in a block of vacant buildings

across the street from the stadium.<sup>34</sup> The location of Fifth-Third Field also played a large role in the placement of the Huntington Center, which together have given the area year round activity.

It should be noted that Toledo's stadium has been relatively successful financially. While many cities have been trapped paying off bonds for stadiums of teams that have since departed, the bonds for Fifth-Third Field were paid off 5 years early and saved the county over \$5 million in payments. The bonds were paid off with receipts from the stadium, including naming rights and ticket sales, which had been higher than initially projected (Reiter, 2016).

While there are minimal signs of redevelopment around the stadium in Toledo, it has not had an influence throughout the area defined as treated. As Toledo F [developer] described the problems: "Toledo's always had a problem of momentum, I would say, this time being a baseball stadium. If you don't have a long-term momentum plan, and if I was a public planner, we've got to look at what we want to develop and come up with a strategy." Both the lack of planning and inability to marshal change led to a nine year gap for the development of a second anchor amenity in the area. While the stadium has brought visitors to the area and has led to marks of development, the stadium alone has not been a large enough driver of change to transform Toledo's downtown.

<sup>34</sup> In fact, the management of the Toledo Mud Hens have remained highly involved in the development of the neighborhood. Every team gives out a game day publication, which provides a list of players, information about promotions happening during the season, and ad space for sponsors. However, the cover of the Mud Hens program for the 2017 season features not their stadium or a player, but rather their Hensville buildings. The pages read almost as an urban development advertisement, with long sections on the project, explaining that "the whole intention of the Hensville project is to ensure the continued revival of Toledo's downtown" (The Muddy Times 2016, page 38). Not many American professional sports teams are operated as nonprofits, and fewer carry on the extra burden of acting as an urban redeveloper around the stadium.

### 4.3 Case Study of Louisville, Kentucky

#### 4.3.1 Introduction.

Louisville, Kentucky's ethos is a mix of Southern hospitality, Northeastern business, and Midwestern humility, owing to their site at the crossroads of America's cultures. One of the oldest cities west of the Appalachian Mountains, early decades saw slow growth until the advent of the steamboat and a boom in industrial development and shipping. Their setting on one of the largest and oldest inland ports in the country combined with their central location has always made Louisville a center of shipping and cargo,<sup>35</sup> which continues today as they are the base of operations for United Parcel Service (UPS). The city is perhaps best known for hosting the Kentucky Derby, which each year draws hundreds of thousands of visitors into the city for the mile and one-quarter thoroughbred race as well as the two weeks' of events leading up to the race itself.<sup>36</sup>

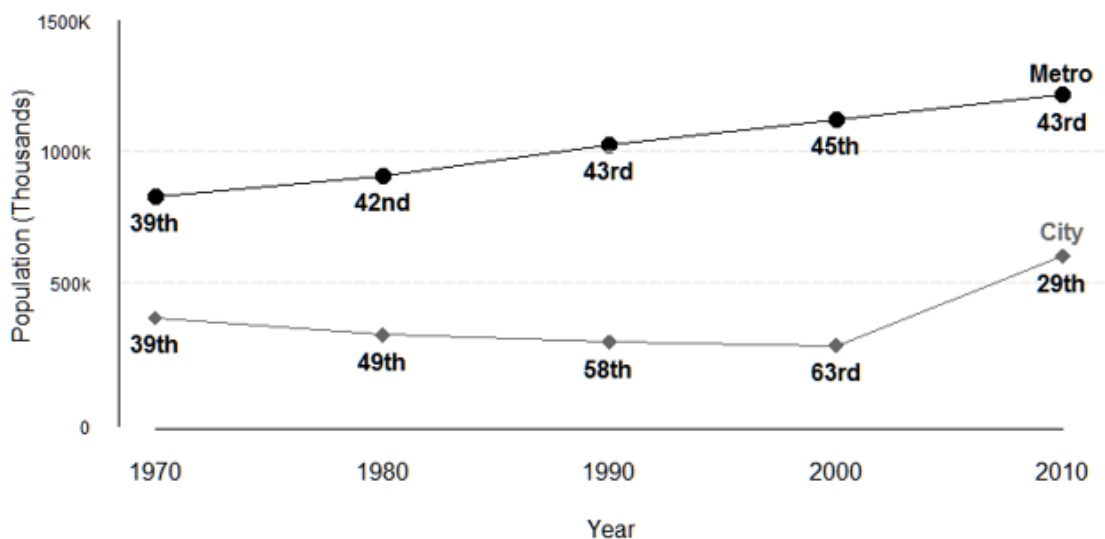
Louisville has hosted more than its fair share of national characters, including Colonel Sanders, Supreme Court Justice Louis Brandeis, and Muhammed Ali, and the city makes efforts to celebrate them all throughout their downtown. For a city as large as Louisville, a large proportion of current residents have either lived in the region their entire life or 'boomeranged' after college: "It's interesting that there's a common thing in Louisville, it's weird when you first come here it's like everybody wants to know where you went to high school. When they say where'd you go to school they mean high school,

<sup>35</sup> One of those early cargos that contributed to the city's early growth was slaves, and the phrase 'sold down the river' originated in reference to slave families being divided and shipped out of Louisville literally down the river. Inscoc, J. C. (Ed.). (2001). *Appalachians and race: The mountain south from slavery to segregation*. University Press of Kentucky.

<sup>36</sup> Popularly known as the Run for the Roses, the Derby is also often referred to as the 'Two Most Exciting Minutes in Sports.'

they don't mean college” [Louisville D, nonprofit]. Despite their Southern location and the rootedness of residents, respondents argued that Louisville “has always been progressive,” and more specifically, that “We were the first southern city to have LGBT rights ordinance” [Louisville H, nonprofit].

Despite Louisville’s openness to outsiders and ability to retain their own residents, the city went through a similar hollowing out as other industrial cities. However, the metropolitan area never saw the same level of decline in population as the city, as shown in Figure 4.5.



**Figure 4.5 Louisville, KY: Population (and National Rank)**

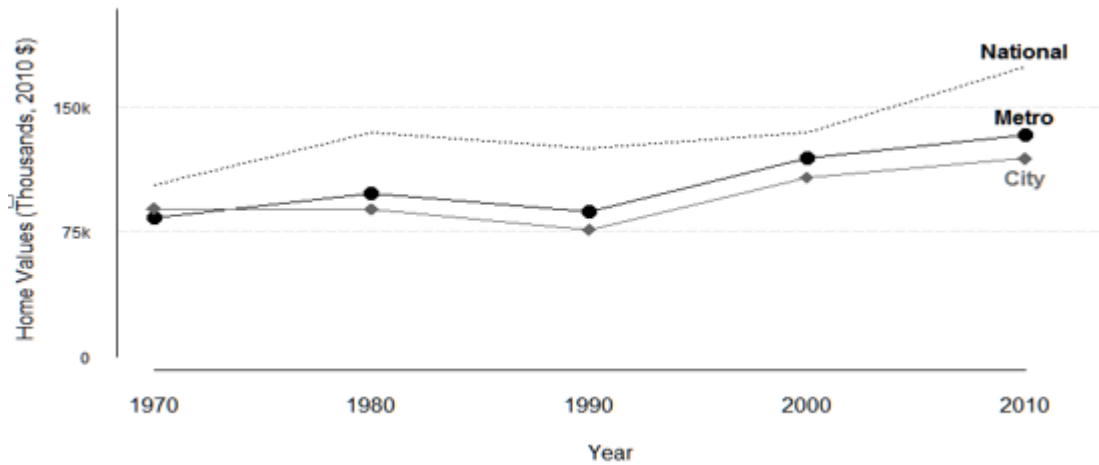
Louisville’s metropolitan area grew across the 40 years observed, but it did not increase its place in the country, as it ranked 39<sup>th</sup> in 1970 and 43<sup>rd</sup> in 2010. The national ranking of the city population matched that of the metropolitan area in 1970, but declined steadily until the end of the century despite barely losing population numerically during

that time. After falling to 63<sup>rd</sup> nationally in 2000, the merger of the city's and Jefferson County's government explains the sudden growth of the population at the start of the 21<sup>st</sup> century. The merger was motivated in part by the declining population of Louisville's city, and while it succeeded in that regard, the evidence is inconsistent on whether it improved service delivery or economic growth (Carr, Bae & Lu, 2006).

The merger of the city and county government, "the only large city in a generation that's merged its city and county," [Louisville C, business] was led by Mayor Jerry Abramson, who residents used to call "mayor for life because he ran so many terms" [Louisville J, government]. When Jerry Abramson won election as the Lieutenant Governor in 2012, the new mayor, "Greg Fisher ... has a very similar vision in terms of the importance of the urban core" [Louisville J, government]. Thus, with a pronounced quantity of long-time residents and only three mayors in the last thirty years<sup>37</sup>, there is a great sense of continuity of policy and direction for the city.

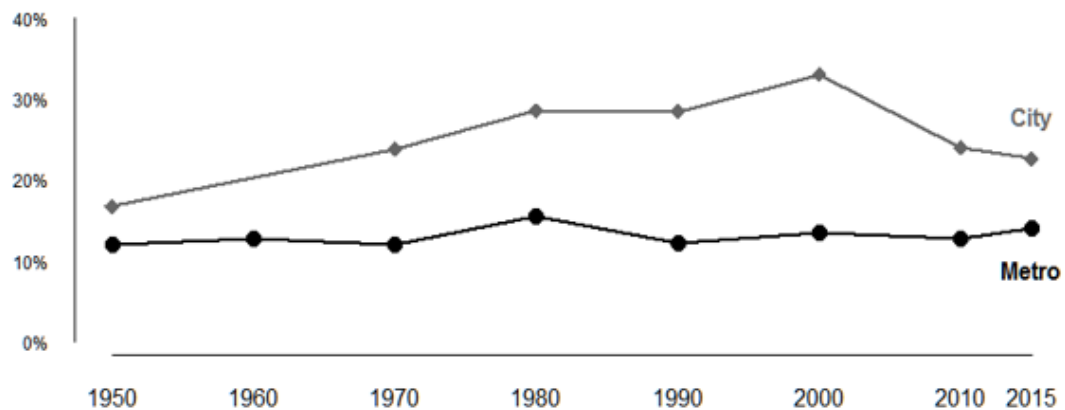
Despite the fluctuations in the distribution of the population, the housing market for Louisville has remained stable for both the metro and city. While they have consistently lagged the national housing market, the city and metro have remained similar throughout the past forty years. In addition, both the city and the metro's housing market saw growth in the decade between 1990 and 2000, indicating that the region had already begun to recover from its earlier regional decline.

<sup>37</sup> Jerry Abramson (1986-1999); David Armstrong (1999-2003); Jerry Abramson (2003-2011); Greg Fisher (2011-)



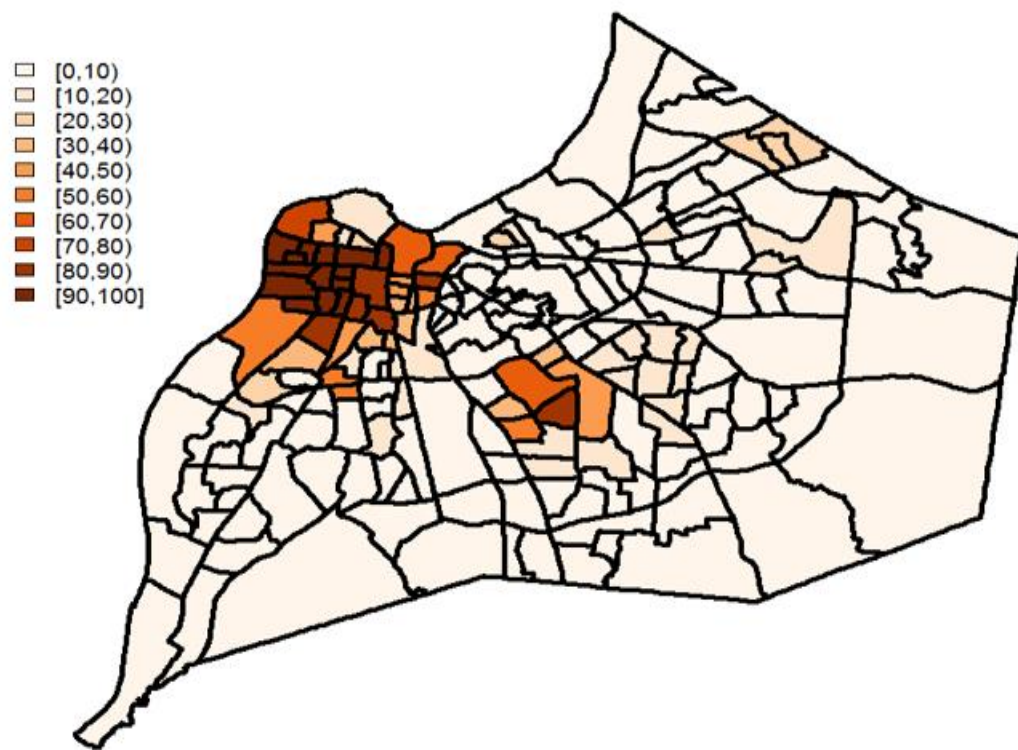
**Figure 4.6 Louisville, KY: Median Home Values**

There was an added racial element to the decline of Louisville as a riot in 1968 in the city's downtown accelerated change. While the city and metro were similar in their shares of African-Americans in 1970, a difference of only 5 percent, the divergence grew over time until the government merger as shown in Figure 4.7.



**Figure 4.7 Percentage of African-Americans in Louisville**

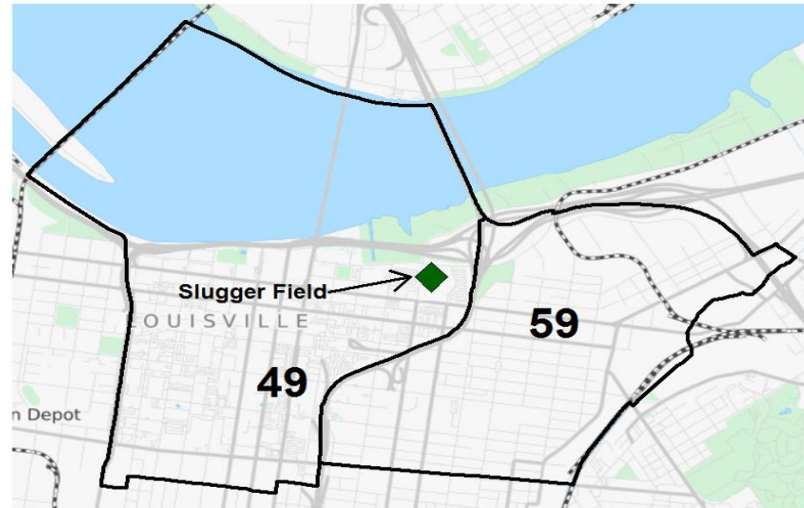
At present, by some measures, Louisville remains among the most segregated cities in the country, and such racial disparities create increased inequalities and barriers to invigorating decaying neighborhoods (Glaeser & Vigdor, 2000). As Figure 4.8 shows, African-Americans were heavily concentrated in central Louisville in the 2000 census, particularly on the West side of the city where they account for over 90% of residents. On the East side of the city, where the stadium was located, the racial composition is somewhat more diverse, but African-Americans still accounted for a majority of residents in 2000.



**Figure 4.8 Percentage African-American by Tract in Louisville 2000**

#### 4.3.2 Overview of Neighborhoods Prior to Stadium Opening

Two tracts<sup>38</sup> in Louisville fall within one mile of Louisville Slugger Field, as shown in Figure 4.9.



**Figure 4.9 Louisville Treatment Tracts**

Tract 49 encompasses the traditional downtown of the city, which during the 1990's retained a large share of the city's employment and several cultural attractions, but struggled to offer retail or dining in the evening. For instance, Tract 49 holds Actors Theatre, the winner of numerous regional theatre awards, and the Kentucky Center for the Arts which houses the opera, ballet, and orchestra. In addition, the Louisville Slugger Bat Museum opened in 1996 on West Main Street and has proven to be a successful attraction. However, despite the arts and a core of employment, which included the Humana headquarters that opened in the 1980s, there was "no activity after five o'clock

<sup>38</sup> The two treated tracts in Louisville are actually larger in terms of total land area than the five in Toledo (2.21 vs.1.74). Thus, while the number of observations for different projects can be quite different, the actual size of the treated area is fairly consistent. However, with fewer observations there is a less refined view of the shape of changes observed in Louisville.



.... Very few restaurants that really served any kind of nightlife here” [Louisville D, nonprofit]. As Louisville K described the city: “Louisville had a pretty strong central office market. Our office was strong, our residential was nil, our retail was in the toilet, so you could bowl on the streets at 5 o'clock. 5:15, maybe” because "the city was a place where people went to work, then they got in their car and they went home" [Louisville F, developer].

Early efforts to revitalize Louisville's downtown failed. One of the first and longest such efforts concerns Fourth Street in Louisville. Long a center of theaters and shopping, three blocks on Fourth Street were converted into a car-free shopping center called the River City Mall as part of an effort to stabilize downtown retail. However, the River City Mall quickly closed, and in the 1980s the Galleria was opened on the same site. The Galleria, opened with partial public financing, strove to imitate a suburban mall in an urban location<sup>39</sup> but, like River City Mall, was unsuccessful.

There were also attempts to invigorate the downtown housing market in the late 1980s, particularly with a project known as the Crescent. While the project used local funds including union pensions, the major lender was Manufacturers Hanover out of New York. Further, the management and expertise were external to Louisville and when the project failed it "absolutely made every local financial institution leery of downtown housing" [Louisville F, developer] and prevented any similar projects for a decade.

However, Louisville was able to preserve much of its historical building stock

<sup>39</sup> "...the thing that we had missed in urban redevelopment is we, at first, tried to do urban redevelopment by making suburban garden style apartments or suburban malls downtown. We called them urban malls. Why would people in the suburbs come to an urban mall when all they had to do was go to their own little mall that was in their backyard and had free parking?" -Louisville F

despite its decline: “when a lot of other cities were tearing down buildings in the '60s, '70s, '80s, Louisville did not. We didn't have money. There were not developers out there looking for the land, so nobody was tearing down the buildings. ... we lost some buildings, but we have such a huge collection of original architecture" [Louisville B, government]. Currently, downtown Louisville holds 84 buildings on the National Register of Historical Places, many of which have been redeveloped into modern attractions.

The second treated tract in Louisville can generally be described as the East Market District, and combines parts of Butchertown, Phoenix Hill, and NuLu. NuLu (a relatively recently coined portmanteau of New and Louisville) is a neighborhood that developed shortly before the stadium. Butchertown and Phoenix Hill are historically residential areas, while NuLu hosts a cluster of art galleries and restaurants. Tract 59 is separated from downtown by I-65, which can be crossed under by foot.

While downtown Louisville is defined by its past as the center of employment and its copious historical architecture that remains, the East Market District was long distinguished primarily by a homeless mission that prevented the development of retail or the improvement of the housing stock. As one long-time business owner in the East Market District explained: “there was a homeless shelter about two blocks down from us, a couple galleries, Joe Lay's antiques, but that was kind of it ... I kept the door locked when I was in the office by myself, you know. If that's like an indication of what it was like” [Louisville K].

**Table 4.5 Pre-Treatment Status of Louisville Tracts (percentiles in parenthesis)**

Tract	Rent	Income	Housing	Population	Vacancy
59	\$233 (3rd)	\$11,862 (2nd)	2,674 (95th)	5,072 (83rd)	7% (68th)
49	\$359 (5th)	\$15,546 (3rd)	1,564 (51st)	2,553 (23rd)	20% (100th)

The two tracts that were treated by Slugger Field were blighted in 2000, though not undeveloped. As shown in table 4.5, both tracts had extremely low rents and median incomes relative to the rest of the city in 2000. However, tract 59 has a history as a residential area with over 2600 units, and a high population as well. While tract 49 in downtown was less built-up in 2000, it is over the 50<sup>th</sup> percentile in terms of housing, though it ranks in the lowest quartile of the city in terms of population. The large gap between the count of housing and population helps to explain why it had the highest vacancy rate in the city of Louisville at 20%.

#### *4.3.3 After the Stadium Opened*

Louisville's Slugger Field, which hosts the Louisville Bats<sup>40</sup>, was built in 2000 at a total cost of \$51 million (in 2015 dollars). In the first decade after opening the team annually attracted over 600,000 visitors, but in the last few years those figures have fallen to the mid-500 thousands; in 2015, they ranked eighth<sup>41</sup> out of the fourteen teams playing in the International League. The stadium itself is situated adjacent to Waterfront Park and the Ohio River, but also has overpasses from I-65 visible from behind home plate. The stadium is located on the site of a former train yard, which had modernly been turned into a scrapyard; the stadium preserves parts of the freight yard built in 1895 for event space

<sup>40</sup> Their mascot is the animal, but the illusion is to the piece of baseball equipment. The team is thus tied to the Louisville Slugger baseball bat in multiple ways, as the corporation purchased lifetime naming rights to the stadium.

<sup>41</sup> One spot and roughly four-thousand fans behind the Toledo Mud Hens.

and the team's offices, which draws comparison to Camden yard in Baltimore.

Both treated tracts in downtown Louisville saw substantial redevelopment between 2000 and 2010 as shown in Table 4.6. Median rents increased in both downtown (13.8 percent) and the East Market District (25.7 percent). In addition, median incomes increased even more, with both seeing jumps of over 30 percent.

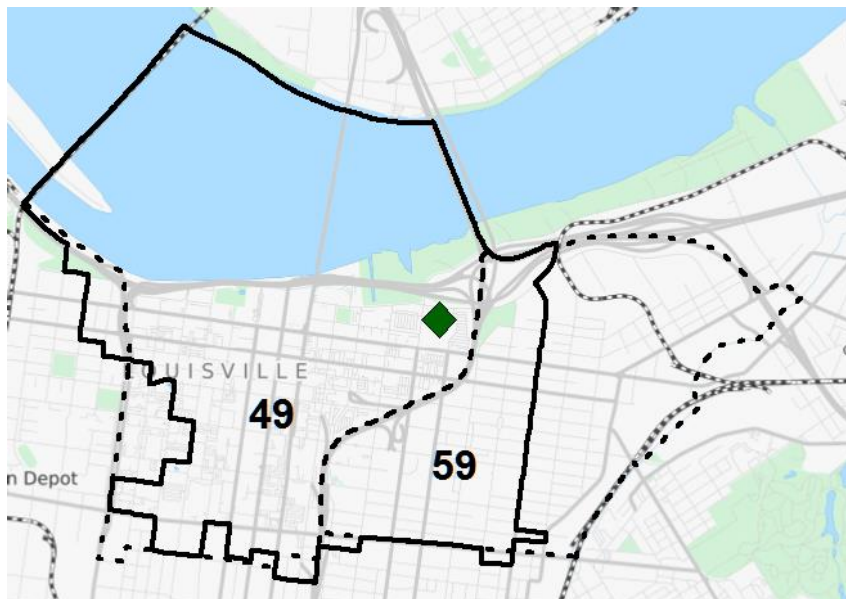
**Table 4.6 Change in Treated Louisville from 2000 to 2010**

Neighborhood	% Change Median Rent	% Change Median Income	% Change in Housing	% Change in Population	% Change in Vacancy
Downtown	25.7%	40.2%	25.8%	55.2%	5.0%
East Market	13.8%	30.2%	-13.1%	-25.0%	7.8%

However, the two tracts saw different changes in their housing stocks and populations. The East Market District saw a substantial increase in both housing and population, by 25.8 and 55.2 percent respectively, while downtown saw decreases in both by about half of its counterpart. Part of that decrease possibly relates to intentional actions of the government to do away with concentrated low-income housing and attempts to construct mixed-income housing using HOPE VI funding. This may have “really helped the city to develop a more hospitable downtown feel” [Louisville H, nonprofit] but also meant a decrease in the total housing available. Oddly, considering the opposing directions that the housing stock went in both tracts, there were increases in the vacancy rates in both tracts, which is difficult to attribute to any single cause.

Residents have noticed the changes to downtown, noting that “particularly the food and dining, eating and drinking scene, it's just extremely vibrant and the city as a whole but especially downtown ... People will vacation in Louisville just to go eat and

drink for a week" [Louisville E, resident]. That view is borne out by data from the Economic Census (Table 4.7), which shows substantial growth in the amount of entertainment and food services in the area. Both categories grew over the decade by about one-third, although the number of arts, entertainment, and recreation establishments declined between 2007 and 2012.



**Figure 4.10 Treatment Tracts to Zip Code 40202**

**Table 4.7 Economic Census Data for Louisville**

<b>Category</b>	<b>2002</b>	<b>2007</b>	<b>2012</b>	<b>Change 2012-2002</b>
Arts, entertainment, and recreation	24	36	32	33.3%
Accommodation and food services	111	132	147	32.4%

In addition to the dining scene, there's been a change in population density downtown: "There's definitely more people living downtown as opposed to just working and then getting out at four or five, so I think it's become a much more lively place and

more nightlife offerings definitely made it a safer place. People don't fear to walk from bar to bar as much downtown anymore” [Louisville K, business]. One respondent, who lives in the suburbs but works downtown, mentioned that the largest change has been the perception. Louisville A [government] explained that friends used to say ““It's not safe. I would get lost. I don't know my way around,”” but now because of “the opportunities to come down here: the entertainment, the food” that “the perception has changed significantly,” all of which “start[ed] with Slugger Field being built.”

Slugger Field was given broad credit for the changes to downtown by respondents because it was an early piece that preceded the renaissance. As Louisville J [government] said, "The baseball stadium was kind of the real key to turning this side of downtown into a hospitable, likable, friendly place." Or in the very similar words of Louisville G [developer]: “I think the Bats stadium was really one of the keys to revitalizing the general downtown area and making it seem friendly and approachable and kid friendly and family friendly.”

The effects were felt in both downtown as well as the East Market District: “After Slugger Field opened everyone was like, ‘Well East Main and Market is a gorgeous area, what could we do there?’ All of a sudden those buildings started getting façade improvements and businesses started moving in” [Louisville B, government].

A portion of that success was attributed to its specific location. Replacing a scrapyard was mentioned by several respondents as part of the importance of the project: "Well, I mean certainly it was a very big barrier before. It was really just a blight, right? It was scrapyard. Removing the blight helps, always helps, but I think that having it there and having it look so great helped" [Louisville I, government]. Government official

Louisville G said, “I think that was probably a really smart place to put a publicly subsidized property because of the brown field issues” and “because it was such a brown field I just don't know what other use. I don't think there was a private sector use really for that property.” Or as Louisville F [developer] stated, “Without Slugger, they had no way to get the scrap metal yard mitigated. That was the big battle that was going on...By building it there, it's created some economic development in that area that resulted in the silver building with the sloped roof, it resulted in the Fleur-de-lis building.”

However, one telling feature of Louisville's redevelopment is the number of times that the respondents mention the stadium in conjunction with other projects:

"The thing about Slugger that is really different, at least from my perspective, than some other things where you build some sort of sports facility and then there's nothing else that happens, *Slugger happened along with so many other projects around there* [emphasis added] that it really helped I think make that project so impactful to the park and the housing, and really making that part of downtown have different uses kind of all at once" [Louisville I, government].

The Waterfront Park, which was built adjacent to Slugger Field and opened two years earlier, was mentioned several times: "I don't think there's any question that, Waterfront Park and Slugger Field would have been part of a synergy. That they were related" [Louisville O, resident]. Or as Louisville F explained: “You put the ballpark down there, you get some restaurants. Then we furthered it by building the Yum! Center because, at that point, you've got a balance between ... All that happened downtown that was keeping it alive for anything other than business was the arts, and the arts venues primarily are activated during the winter.”

Thus, as Louisville L [government] concluded, "the redevelopment around Slugger was the result of some very deliberate decisions, right? It wasn't like Slugger got

built without the sense that the stuff around it was important. You have to kind of cluster things. I think that it was not a mistake that that project had a positive impact, because it was very deliberately intended to have a positive impact. It wasn't like they built it and didn't understand that the other stuff needed to happen." While credit was certainly given to the stadium for playing a role in the redevelopment, a common sentiment was that

It was a number of things, really. I think that having Museum Row with the bat factory coming, and having the constant addition of new things on West Main Street was really key. West Main Street just feels great. It has such a great scale to it, so people really like that. I think that Slugger Field and Waterfront Park ... They were really important to each other, and I think that that is absolutely the case [Louisville I, government].

The number of projects opened at the same time or shortly after Slugger Field is dizzying. In downtown Louisville, Waterfront Park opened in 1998 and one year later the Convention Center began a \$72 million dollar renovation adding over 400,000 square feet of floor space. Museum Row, which is a cluster of ten major museums,<sup>42</sup> opened in 2004 and runs along Main Street. Those are in addition to the already present Actors Theatre and the Galt House. In 2010, the KFC Yum! Center, which hosts concerts as well as the University of Louisville Basketball games, opened on Main Street between Museum Row and Slugger Field. This flurry of activity makes it impossible using decennial census data to pinpoint how much of Louisville's redevelopment should be attributed to Slugger Field, but it highlights the importance of having other amenities ready for investment.

No matter how deliberate the decisions were, Slugger Field was not directly

<sup>42</sup> Museum Row includes the Frazier History Museum, Glassworks, Louisville Slugger Museum and Factory, Kentucky Science Center, KentuckyShow!, Kentucky Museum of Art and Craft, 21c Museum Hotel, the Muhammad Ali Center, The Kentucky Center for the Performing Arts, and the Evan Williams Bourbon Experience.



involved in those secondary projects despite contributing to making the surrounding area more attractive to investment. Therefore, to credit the stadium with all changes in the area is inappropriate. The projects that the stadium most directly contributed to were within a few blocks (Shafer, 2000), and small restaurant and shop development not unlike what surrounds Fifth-Third Field in Toledo. However, the larger amenities that helped to maintain momentum in Louisville and led to its large downtown growth in the period between 2000 and 2010 likely would have occurred regardless. As Louisville B [government] explained when posed the hypothetical of what downtown would look like without the stadium: “I believe there would still be some sort of, albeit a very much smaller resurgence on East Market and Main. People wouldn't have looked at it in such a concentrated manner.” Thus, while Slugger Field played a part in downtown Louisville’s revitalization, it does not deserve absolute credit for the changes observed.

## **CHAPTER 5**

### **CONCLUSION**

My dissertation has studied minor league baseball stadiums evaluating whether and how these projects achieve urban redevelopment in the immediately adjacent neighborhoods. The motivation for the research was the need for greater examination on the numerous redevelopment projects undertaken in small-to-mid sized of American cities as well as a more refined and complex work on the subject of stadium-led redevelopment. The focus on minor league stadiums has allowed the use of a large panel data study of a wide range of cities, which is uncommon in research on sports facilities. Specifically, my dissertation has applied the Special Activity Generator framework to minor league baseball stadiums, to evaluate their success on a logic underlying the public's financial support for these projects.

In the previous pages, I have analyzed whether a minor league baseball stadium's effect on redevelopment could be estimated as well as how that effect is realized in two cities. In this final chapter, I first summarize all of the findings for both Chapters 3 and 4. However, beyond a basic recitation of the results, I pay particular attention to how the studies have collectively addressed the tenants of the Special Activity Generator framework as well as the ways that the two methodologies interact and inform each other. With the central claims of the paper addressed, the chapter concludes with a discussion of future directions for the research and lessons for policy.

#### **5.1 Results**

Chapter 3 included four sets of analyses, the first of which studied the locations of minor league baseball stadiums in order to assess whether they were intended as

redevelopment projects by testing a model to predicting their locations. The results provide strong evidence that stadiums are placed in impoverished areas and situated where they can have a redevelopment impact. Specifically, stadiums are more likely to be located in or near census tracts with fewer home owners, fewer children, higher poverty rates, more minorities, and larger shares of water as a percentage of the total area. In addition, on the measures studied, the tracts near stadiums were not found to be redeveloping between 1990 and 2000, indicating that treated areas had not already built momentum prior to the stadiums arrival.

The second half of Chapter 3 evaluated the total effect stadiums have on surrounding census tracts after one decade. When analyzing the changes in tracts treated by the new stadium against tracts in the same city, stadiums are shown to have a large and positive effect on the redevelopment measures tested. That results holds whether the entire city is used as the control group, or whether a subset of tracts that are highly similar on the traits that influence stadium location is used. In particular, evidence is shown that median housing prices, median incomes, and the number of housing units increase in the treated areas relative to control tracts in the same cities.

However, in the final analyses of Chapter 3, I also compare the tracts near the stadium to similar tracts in cities that did not build a stadium of any sort during the study period; with that control group, the stadium effect is only significant for increases in housing construction and vacancy rates. That finding indicates that stadiums may only concentrate and redirect redevelopment activities within a city. Just as treated tracts are the beneficiaries of receiving a stadium, other parts of these cities face the detriment of not receiving the stadium; for that reason, there is both a positive effect near the stadium

and a simultaneous negative effect throughout the rest of the city.

Chapter 4 reported the results of case studies of two cities that built stadiums around the year 2000 but observed different effects one decade later: Toledo, Ohio and Louisville, Kentucky. Louisville's downtown has achieved successful growth since the opening of Slugger Field. The stadium project was designed to remove a specific space of urban blight, which influenced private investors to make additional investments in the surrounding area. As respondents argued, the removal of that scrapyard created a more hospital area that was more inviting to entertainment and private investments. However, much of the secondary developments were not directly related to the stadium, meaning that only partial credit for the changes should be given to Slugger Field for the total redevelopment of the adjoining neighborhoods.

In contrast, Toledo's stadium failed to generate of lasting positive development in the surrounding neighborhoods, primarily because of a lack of secondary investments generated by the project. While the immediately adjacent blocks have seen growth in restaurants, the downtown of the city continues to decline. Despite that, respondents had a positive view of the stadium's ability to generate activity and its effect on the perception of the city's downtown.

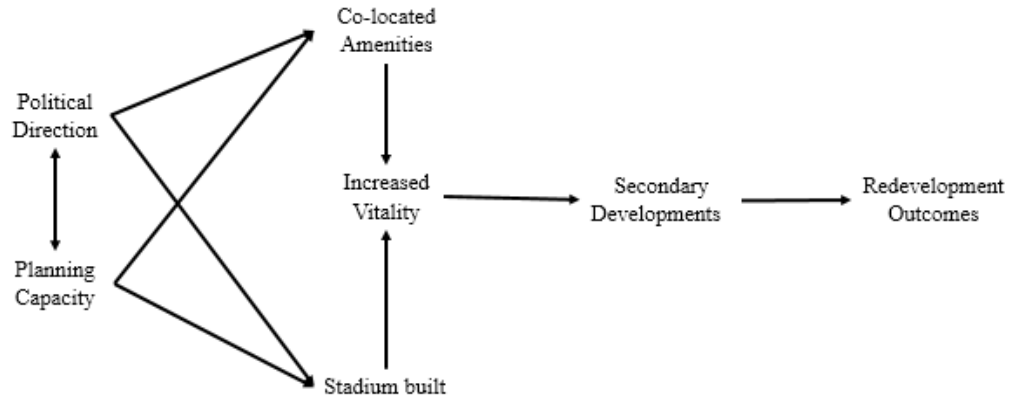
Table 5.1 and Figure 5.1 summarize the cross-case results. Table 5.1 displays the key codes used in organizing the interview data collected in both cities along with a brief analysis of how the code is reflect in both cases, while Figure 5.1 displays the codes with a temporal ordering. These variables help to track the factors that explain the differing trajectories of Louisville and Toledo's redevelopment project.

Louisville's cohesive political direction across decades and greater preparedness

to generate additional amenities played a large part in their successful redevelopment. Both cities built attractive, similarly priced stadiums that have had matching effects on direct activity generation; however, the difference in additional amenities explains much of the difference. While the stadiums created activity, Louisville's downtown has continued to outgrow Toledo with secondary developments, leading to a superior redevelopment outcome. Thus, much of the difference in the result was dictated prior to shovels hitting the ground for the minor league stadiums.

**Table 5.1 Codes for Qualitative Research**

<b>Code</b>	<b>Louisville</b>	<b>Toledo</b>
Political Direction	Consistent vision and mission, 3 mayors since 1986	Political turnover, lack of cohesion
Planning Capacity	Comprehensive planning	Lack of vision
Stadium built	AAA, downtown stadium, \$49.39 million spent	AAA, downtown stadium, \$47.51 million spent
Increased vitality	500,000 visitors per year to stadium for games	500,000 visitors per year to stadium for games
Co-Location of Amenities	Numerous amenities located near stadium, opened in similar time period	Struggle with more than one project per decade
Secondary developments	Growth, from 111 accommodation and food services in 2002 to 147 in 2012	Growth, from 38 accommodation and food services in 2002 to 59 in 2012
Redevelopment Outcome	Substantial growth	Stagnant



**Figure 5.1 Relationship of Qualitative Codes**

## **5.2 Interpretation**

### *5.2.1 Evaluating the Special Activity Generator Framework*

Both Chapter 3 and 4 provide ample evidence evaluating minor league baseball stadiums as Special Activity Generators. Robertson (1995) laid out three objectives that SAGs should realize in the surrounding areas in order to be considered successful. First, in order to have the maximum public benefits, Special Activity Generators should be placed in a blighted area that has been unable to attract private sector investments. The location analysis in Chapter 3 indicated that the areas where stadiums are being built were among the least developed in their cities. In addition, a closer analysis of the pre-treatment conditions in both Louisville and Toledo showed that the stadiums were built in underdeveloped areas, the tracts for which were often in the lowest tenth percentiles for the city on most measures considered. Respondents in both cities mentioned that the areas needed an anchor in order to catalyze further investments from the private sector. For Toledo, the stadium's site was selected because the neighborhood was a vast

undeveloped space with a decaying industrial purpose and no recognized future use. On the other hand, Louisville selected their site in order to eliminate a negative land use at the entrance to downtown that had blemished surrounding blocks and prevented private investment. In both cases, the stadiums were intended to jumpstart redevelopment efforts in areas that were thought to have unlocked unrealized value

The second anticipated benefit of SAGs is that they create spillover spending for surrounding businesses and add vitality during weekends and evenings. In both Toledo and Louisville, there was an uptick in restaurants and arts venues in the areas surrounding the stadium, indicating a greater liveliness for residents and visitors. Both stadiums have also been successful at attracting fans to the games, with each ranking in the middle of their league across the entire decade. In addition, the increase in median income relative to the rest of the same cities observed in Chapter 3 indicates that there is additional money that is available to be spent at nearby businesses, in so far as such funds are spent locally (Speck, 2013). In addition, increases in median housing prices indicate greater demand to live in the neighborhood. However, the populations of the treated tracts did not grow in either set of analyses in Chapter 3, indicating that activity may not be consistent.

Third, Special Activity Generators are expected to stimulate additional physical redevelopment in the surrounding community, be it commercial or residential. Chapter 3 showed an increase in housing construction, both within the cities and against a comparison of cities without stadiums, displaying a strong lure of residential development in the areas surrounding stadiums. In addition, the increase in food services and accommodations around the stadiums in Toledo and Louisville denotes new

construction and the redevelopment of buildings in those areas.

Thus, there is evidence for all three objectives in both the quantitative analysis and the case studies that minor league baseball stadiums in the sample succeeded as Special Activity Generators after one decade. However, the magnitude of those changes is a related and important question.

### *5.2.2 What Share of Credit Should go to Stadiums?*

Beyond the specific objectives of SAGs and the theoretical framework, the case studies tested the assumption that minor league stadiums deserve credit for the total effect observed in the treatment areas. The assumption that stadiums should account for the total effect of the change in census tracts within one mile was critical to Chapter 3's analysis and the ability to estimate the size and direction of change in the treated areas. The results from the case studies (Chapter 4) indicate that the results from the quantitative analysis (Chapter 3) are overestimating the effect of stadiums.

In order to attribute the total change in the treated areas to the stadium it is necessary that a direct link exists between it and secondary investments; essentially, and argument would need to be made that *if not for the stadium*, the secondary amenities would not have been built. In particular, that could occur in the contracting of the deal, similar to what was done in San Diego and Petco Field with the guarantee of private investments contingent upon the construction of the stadium (Chapin, 2002). However, that was not the case in Louisville and none of the respondents argued that all secondary developments resulted only from Slugger Field.

However, Slugger Field did act as an early investment in a particularly difficult location, and therefore helped to catalyze further projects and development in the



surrounding space. By removing the negative land use of a scrapyard at the entrance to downtown, the stadium helped to alter the image of the surrounding area in the public's mind and gave them a reason to visit. The removal of the scrapyard, which previously had a deleterious impact on surrounding property values and had prevented private sector investment, was identified by respondents as being a critical event that catalyzed further redevelopment of downtown. Thus, it is difficult to assign the size of the direct effects to the stadium because of the multiplicity of other amenities that were added to the area, but it is clear that the full change cannot be credited to the stadium alone.

Toledo may provide an accurate reflection of the expected returns from an isolated stadium development within a declining downtown. Because there were no secondary amenities added, Toledo's stadium deserves the lion share of the credit for the changes in the area. However, within the total treated area as measured, there is scarce positive change to ascribe to any claimant. The restaurants and nightlife that have opened in the surrounding blocks do derive from the stadium's presence, but the complete treatment area in Toledo is too large to register a positive change from a single public project of this scale. Toledo simply cannot match Louisville on the collocation of amenities, whether they had intended to or not.

The exact share of the change that should be ascribed to Slugger Field or any other project is nearly impossible to estimate accurately, and in a way that is primarily an academic concern. The concept of ascribing the total change in neighborhoods to the stadium alone was an assumption necessary for the models used in Chapter 3; in reality, it is unlikely that the city or county funding stadium projects expect that specific scale of return. For an official, a successful project is a successful project; while the estimates in

Chapter 3 are overly optimistic in the specific magnitudes measured, the effect of stadiums are positive on surrounding neighborhoods for a limited geographic space, likely an area smaller than what I have measured as treated in this analysis.

### *5.2.3 Should Stadiums be Considered Successful?*

If the estimates presented in Chapter 3 are an overestimation of a stadiums effect, does that mean a minor league baseball stadiums are a poor investment for governments? Accepting that other unrelated developments account for some measure of the change observed around the stadiums, there are specific uses for which they have been effective. For example, in Louisville Slugger Field was able to remove a negative land use, which would have persisted without the stadium deal. In Toledo, the stadium was able to help a “blank slate” redevelop into a vibrant restaurant scene, despite having no history as an entertainment center. With an appropriate degree of public financing and specific goals, stadiums can help governments to achieve their aims.

While on the whole the analysis does indicate that some redevelopment occurs around the stadiums, the final analysis in Chapter 3 indicates that part of the benefits derives from the concentration of redevelopment from across the city into one area. For city officials concerned about the vitality of their downtowns, that may not be a significant worry. Developers and government officials believed downtown to be implicitly important for their cities because “you can’t be a suburb to nothing” [Toledo G, government] and that “The very fundamental reason for your place existing whatsoever is always downtown” [Louisville I, government]. To a degree those views are well founded; denser downtowns create increased knowledge spillovers and more productive workers, reminding us that the shape of cities does matter (Chatman &

Noland, 2014; Glaeser, 2010). It is appropriate for governments to be concerned, and in that sense stadiums have delivered on a public benefit underlying their support. However, the fact that there is no clear pattern of increased population near the stadium in the cities downtowns belies this argument, though it may occur with a longer timeline.

Beyond estimating the specific scale of the benefits from any stadium, the task of evaluating stadium projects must also consider the costs of a public-private redevelopment project. While this research has estimated that there are positive redevelopment benefits from the project, even if the figures in Chapter 3 are an overestimation, in order to determine the worth of these projects would also require the enumeration of their costs. The relationship of those two figures, and the opportunity costs of the money invested in the stadiums, should never be lost in public debates, though the specific costs is beyond the scope of this project. While the public may pay attention to either the total cost of the project or the reported amount that the public is contributing, the structuring of that deal is also just as important.

Even though Toledo's stadium has not had the largest benefits in the sample, the structuring of the deal allowed the county to save millions of dollars repaying the bonds for the facility. However, that is not often the case. To take an example from major league baseball, Arlington's new stadium includes a surcharge on parking to help finance the construction. However, rather than going to repay public contributions, as is typical, those funds go to the team, shifting the stadium deal from a 50-50 division of costs closer to 70-30 or 80-20 (Shipp and Smith, 2016). Just as the benefits of a stadium will depend on the urban context and planning surrounding the project, the actual financing deal can greatly shift the costs.

#### *5.2.4 Implications for Future Research*

The two case studies provide insight into the importance of considerations prior to stadium construction that can impact the success of redevelop projects. Political direction and planning capacity are important to consider both from an academic standpoint for correctly modeling the potential for change, and for officials to evaluate whether their downtown will benefit from significant public expenditures.

The differences in downtown redevelopment and the ability to attract additional investments may relate beyond planning to the differing trajectories for broader economic growth that the regions have followed. While both cities had similarly sized populations within their cities in 1970 and neither grew significantly until 2000, the Louisville metro outgrew the Toledo's for decade's. The ability to attract new residents and drive new growth throughout the region will likely influence the redevelopment of a city's downtown, regardless of whether they build a stadium or not.

The broader economic development of the region may also help to explain the differences in political stability in both cities. Since 2002, when its stadium was built, Toledo has changed mayors five times with the party oscillating between the Democratic Party and Independents. The vacillation is indicative of the residents distrust towards their own government and skepticism towards each other. While respondents were generally positive about the stadium and its effects, an employee of a nonprofit, Toledo Q [nonprofit], expressed that the sentiment was not shared by the entire city:

As a result of the Mud Hens coming down, we still have people that are upset that it ever left Maumee and still talk about it. The sports arena, we still have people that are upset that the sports arena was stolen from East Toledo and it comes up all the time. That's the kind of negativity that is pervasive in Toledo... Those are the kinds of things that we need to get over because what we know for sure is the arena's not going to come over to the east side. It's in the downtown so now what

can we do to support that effort and be positive about it and make great things happen.

On the other hand, as explained earlier, since 1986 Louisville has only had three mayors.<sup>43</sup> However, I do not want to confuse the causation here. It is easier for more successful cities to have a cohesive vision as a result of their success and the city's growth may explain why citizens are happier with their government. However, it is illustrative that infighting and distrust seem to be the *modus operandi* for many Toledoans, and such political instability may have a significant effect on the city's future prospects for recovery. Most work on political instability and growth concentrates on the international level, though it is worth considering how further numerous levels of American politics and competition for businesses and growth interplay with electoral returns.

The case studies also provided additional insights with regard to the definition of treatment area as employed in both the quantitative and qualitative analysis. Part of the difference in Toledo and Louisville captured in the census data could potentially be attributed to what tracts were labeled as treated. Toledo had five tracts that were so defined, and one could argue that tracts were included that the stadium was not intended to treat; in particular, the North River neighborhood was not discussed in any of the planning documents reviewed, and is beyond the scope of where the stadium was expected to have a direct and measureable effect. However, to remove those tracts would cause selection bias, because it would imply choosing which tracts were treated based on the outcome rather than the distance from the stadium. While this is a limitation of the

<sup>43</sup> For direct comparison, since 1986 Toledo has had eight mayors.

data construction, it also raises the fact that stadiums will not have an effect solely because of proximity.

It would be possible with a smaller number of cases to use planning documents and newspaper stories to manually determine what neighborhoods or census tracts were treated by a large-scale public project, but it would be critical to do so prior to estimating any changes that resulted. In addition, it would be impractical for a sample of 16 stadiums, and so a clear and consistent rule was adopted across the sample. The definition of the treated areas captured a large swatch of cities downtowns; however, in several cities there were no census tracts with centroids less than .9 miles away. While a one-mile radius may have been too large, when using census tracts it was nearly the minimum distance possible. More flexible definitions of treated may have been possible if just doing case studies, but in order to structure both analyses around a common definition of treated the wider radius was necessary.

A related issue is how that census tracts relate to neighborhoods. While Toledoians spoke highly of the stadium's effect in the Warehouse District, the two census tracts used to approximate it and the neighborhood as it is understood by residents may be quite different. As One respondent that has lived in the Warehouse District for twenty years said "Prior to Fifth Third Field being built, there were seven tenants. There were seven people that lived in the warehouse district. Today, there's well over seven hundred." [Toledo B, business]. Even if the respondent is using some hyperbolae to describe the former state of the neighborhood, he is likely describing a smaller area than I have used in the study as the data shows many more than seven residents in 1990 for the two tracts that overlay to the Warehouse District. Unfortunately, the Census does not

disaggregate census tracts 34 and 37 into Block-Groups, which would allow for a more nuanced look at the spatial distribution of redevelopment around the stadium in the Warehouse District.

A finer unit of analysis will improve future studies, whether they concern stadiums or other types of SAGs. In particular, the case studies brought to light some of the challenges in assessing neighborhood change at the census tract level. With block level data, it may have been possible to pinpoint the stadiums effects immediately adjacent to the stadium, where it was primarily hoped to have an impact. In future work on redevelopment projects with limited reach, census tracts may be too blunt to measure accurate effects and there is a great need for block level data to better understand the results at the local level as it is understood by residents. However, that limitation was accepted for this study because census tract data presented the opportunity to structure the analysis over 20 years with consistent geographies. With the increasing availability of more minute geographic data coming available from the American Community Survey, more nuanced research should be possible in the future

Louisville also shows clearly the importance of agglomeration in redevelopment, both spatially and temporally (Hall, 1989). Because the city had such a concentrated burst of activity within less than one square mile, and just as importantly, doing so within a single decade allowed each to reinforce the others and maximized the returns. This truth was not lost in Toledo, even if it wasn't achieved. As Toledo S said about prior attempts at redevelopment in Toledo, "I think perhaps if the investment in the Riverfront [Portside], the convention center, ballpark, and arena had taken place at the same time, it would've been a much different story. These actions have all taken place, but taking place

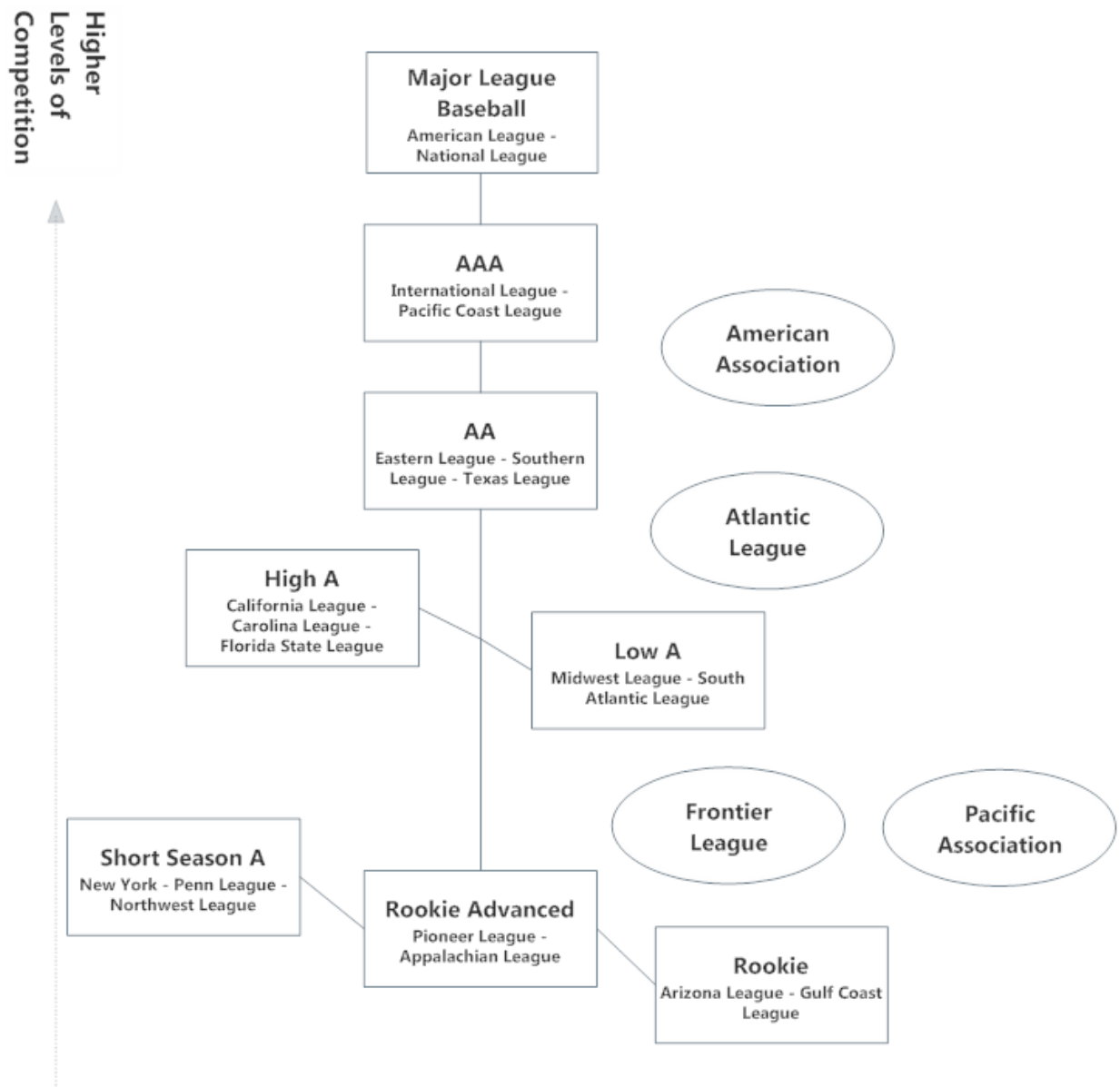
overtime is not good enough.” Added to the fact that many of their best assets, specifically the zoo, art museum, and University of Toledo are spread out throughout the urban core, shows the critical importance of agglomeration to successful revitalization.

Agglomeration, both spatially and to a lesser extent temporally, are far better understood for questions of employment and innovation than they are for the built environment. Future research should look at how distances and timing of redevelopment projects affect each other, particularly in the context of urban revitalization.

The case study of Toledo also raises interesting questions about how urban land-use affects a city’s potential for urban redevelopment. In Chapter 4, I cited that approximately 30% of the space in downtown Toledo was devoted to parking and another 30% of buildings sit vacant. Future research should look at how either of these elements or others predicts a city’s likelihood to achieve redevelopment in later decades. While Slugger Field was partially celebrated by respondents for alleviating a scrapyard in downtown Louisville, it appears that Toledo has far more numerous and smaller negative land uses throughout its built environment. Much of the rust belt suffered during economic restructuring, though how they have handled vacant properties and the development of parking lots likely differs; how cities handle such challenges in the present may affect their potential for future growth.



## APPENDIX A. Minor League Baseball Structure



The chart above displays all of the levels and leagues of Minor League Baseball (MiLB) in the United States. In addition, Independent Leagues are displayed and placed roughly alongside their comparable level of competition in MiLB for orientation; Independent leagues operate outside of levels, so each league is shown its own entry.

Players under contract with a Major League Baseball franchise typically move through the levels of minor league baseball linearly; however, the major league team controls the player's contract and can move them freely throughout the organization, making leaps possible. In addition, the presence of leagues that offer minimal differences in competition make a purely linear path unlikely. Each level of competition house multiple leagues, but within any level the leagues are equivalent and help to keep teams geographically coordinated to minimize travel.

Major League Baseball's draft occurs midseason in June, but rookies are not expected to contribute until several seasons later. In their first season they will likely be assigned to either a Rookie League, Rookie Advanced, or Short Season A league team; Rookie Advanced and Short Season A leagues are slightly more competitive, but all play roughly 60 games after the June draft and are a players first taste of professional competition. The teams generally play their games in their organizations spring training complexes (which are often shared between multiple MLB franchises) and are highly geographically concentrated.

If successful in the first few months, the player may be moved to Class-A the same year that he was drafted. If not, the following season the player will likely start at either Low-A or High-A depending on their level of talents and maturity. It is common for a player to play at both Class-A levels.

There is only one level of competition for Double-A. Many of the most talented prospects move straight to the major leagues after succeeding at Double-A, skipping Triple-A. Triple-A baseball is the highest level of minor league competition and the players are a mix of prospects with lower ceilings and minor league veterans that provide

injury insurance for the major league teams. Triple-A stadiums are the most expensive and have the best facilities.

Players in independent leagues either were undrafted by MLB teams or began their careers in MiLB and their teams chose to no longer retain their rights. Independent league teams often play at a comparable level of competition to MiLB teams, but players are often more experienced but possess less potential. In addition, independent league have begun to sign ex-Major League All Stars to increase attention. These players have limited attraction to MLB teams due to their advanced age, and so play for independent leagues that are primarily focused on attendance and present success rather than player development.

## APPENDIX B. Control Cities Without Stadiums used in Chapter 3

City	Metro	Metro Population	Metro Median Income	Group
Ashland, KY	Huntington-Ashland, WV-KY-OH	806990	38203	Control
Ashtabula, OH	Ashtabula, OH	201515	43115	Control
Atlantic, NJ	Atlantic City-Hammonton, NJ	354609	56368.5	Control
Baton Rouge, LA	Baton Rouge, LA	1452759	45564	Control
Bellwood, VA	Richmond, VA	1608534	57181	Control
Benwood, WV	Wheeling, WV-OH	379080	38829	Control
Bon Air, VA	Richmond, VA	1608534	57181	Control
Bowie, AZ	Sierra Vista-Douglas, AZ	293956	40903	Control
Brandon, VT	Rutland, VT	94402	47008	Control
Bremerton, WA	Bremerton-Silverdale, WA	483921	62802	Control
Bridgeport, CT	Bridgeport-Stamford-Norwalk, CT	1013214	93283	Treatment
Brooklyn, NC	Goldsboro, NC	257206	40913	Control
Camden, NJ	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	7251275	64469	Treatment
Cayce, SC	Columbia, SC	1441082	43140	Control
Cedar Rapids, IA	Cedar Rapids, IA	618939	55122	Treatment
Centralia, IL	Centralia, IL	107371	38404	Control
Chattanooga, TN	Chattanooga, TN-GA	1050302	44337	Treatment
Columbia, SC	Columbia, SC	1441082	43140	Control
Dayton, OH	Dayton, OH	1434088	48638	Treatment
Duluth, MN	Duluth, MN-WI	576818	47929	Control
East Highland Park, VA	Richmond, VA	1608534	57181	Control
Ettrick, VA	Richmond, VA	1608534	57181	Control
Fitchburg, MA	Worcester, MA-CT	1190854	65728	Control
Flint, MI	Flint, MI	484916	42143	Control
Fort Lee, VA	Richmond, VA	1608534	57181	Control
Frankfort, IN	Frankfort, IN	77792	55025	Control
Fresno, CA	Fresno, CA	1505972	44202	Treatment
Gainesville, GA	Gainesville, GA	357788	51688	Control
Gardner, MA	Worcester, MA-CT	1190854	65728	Control
Gary, IN	Chicago-Naperville-Elgin, IL-IN-WI	17297913	65066	Treatment
Hickam Housing, HI	Urban Honolulu, HI	1203808	72855.5	Control
Holyoke, MA	Springfield, MA	735289	53844.5	Control
Hopewell, VA	Richmond, VA	1608534	57181	Control
Kaneohe Station, HI	Urban Honolulu, HI	1203808	72855.5	Control
Killeen, TX	Killeen-Temple, TX	677932	47587	Control

Laurel, VA	Richmond, VA	1608534	57181	Control
Lexington, KY	Lexington-Fayette, KY	636062	51110	Treatment
Lincoln, NE	Lincoln, NE	494504	59481	Treatment
Lock Haven, PA	Lock Haven, PA	93136	43065.5	Control
Louisville, KY	Louisville/Jefferson County, KY-IN	2347683	52149	Treatment
Madison, WI	Madison, WI	1311689	63967	Control
McMechen, WV	Wheeling, WV-OH	379080	38829	Control
Meadowbrook, VA	Richmond, VA	1608534	57181	Control
Memphis, TN	Memphis, TN-MS-AR	1952455	45643	Treatment
Meriden, CT	New Haven-Milford, CT	919869	62846	Control
Myrtle Beach, SC	Myrtle Beach-Conway-North Myrtle Beach, SC-NC	757085	44015	Treatment
New Haven, CT	New Haven-Milford, CT	919869	62846	Control
Oklahoma, OK	Oklahoma City, OK	2033384	46278	Treatment
Oxnard, CA	Oxnard-Thousand Oaks-Ventura, CA	1197230	77063	Control
Paducah, KY	Paducah, KY-IL	234485	41858	Control
Peoria, IL	Peoria, IL	836891	54274	Treatment
Petersburg, VA	Richmond, VA	1608534	57181	Control
Philadelphia, PA	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	7251275	64469	Treatment
Port Hueneme, CA	Oxnard-Thousand Oaks-Ventura, CA	1197230	77063	Control
Richmond, VA	Richmond, VA	1608534	57181	Control
Sacramento, CA	Sacramento--Roseville--Arden-Arcade, CA	2960380	62352	Treatment
Schofield Barracks, HI	Urban Honolulu, HI	1203808	72855.5	Control
Shreveport, LA	Shreveport-Bossier City, LA	889349	41220	Control
Southbridge Town, MA	Worcester, MA-CT	1190854	65728	Control
Springfield, MA	Springfield, MA	735289	53844.5	Control
St. Andrews, SC	Columbia, SC	1441082	43140	Control
Toledo, OH	Toledo, OH	1008848	50463	Treatment
Urban Honolulu, HI	Urban Honolulu, HI	1203808	72855.5	Control
Valentine, AZ	Lake Havasu City-Kingman, AZ	586798	38738	Control
Waipahu, HI	Urban Honolulu, HI	1203808	72855.5	Control
Waterbury, CT	New Haven-Milford, CT	919869	62846	Control
Waverly town, VA	Richmond, VA	1608534	57181	Control
Webster, MA	Worcester, MA-CT	1190854	65728	Control
West Sacramento, CA	Sacramento--Roseville--Arden-Arcade, CA	2960380	62352	Treatment
Wheeling, WV	Wheeling, WV-OH	379080	38829	Control
Willimantic, CT	Worcester, MA-CT	1190854	65728	Control
Worcester, MA	Worcester, MA-CT	1190854	65728	Control
Yakima, WA	Yakima, WA	502701	46632	Control

### APPENDIX C. Index for Case Selection

<b>Stadium</b>	<b>City</b>	<b>Index</b>	<b>Level or League</b>
Louisville Slugger Field	Louisville, KY	3.628	Triple-A
Haymarket Park	Lincoln, NE	3.283	American Association
Chickasaw Bricktown Ballpark	Oklahoma City, OK	2.451	Triple-A
Raley Field	Sacramento, CA	2.386	Triple-A
Dozer Park	Peoria, IL	2.339	Low-A
AutoZone Park	Memphis, TN	2.196	Triple-A
AT&T Field	Chatanooga, TN	1.897	Double-A
The Ballpark at Harbor Yard	Bridgeport, CT	1.588	Atlantic League
Edward A. LeLacheur Park	Lowell, MA	1.568	Low-A
TicketReturn.com Field	Myrtle Beach, SC	1.543	High-A
U.S. Steel Yard	Gary, IN	1.522	American Association
Campbells Field	Camden, NJ	1.407	Atlantic League
Fifth Third Field	Dayton, OH	1.220	Low-A
Veterans Memorial Stadium	Cedar Rapids, IA	1.186	Low-A
Chukchansi Park	Fresno, CA	1.183	Triple-A
Whitaker Bank Ballpark	Lexington, KY	1.077	Low-A
Fifth Third Field	Toledo, OH	1.050	Triple-A

## **APPENDIX D. Interview Questions.**

### **Introductory questions leading to stadium discussion across participants**

How long have you lived in [city]  
What changes have you observed  
What is the biggest change  
What areas in [city] are growing and when did that start  
What do you think drove those changes

### **Government/Economic developers**

Why was the site chosen for the stadium  
Were there other sites being considered  
What goals was the government hoping to accomplish  
What other redevelopment efforts were made in the area before the stadium  
How much of the surrounding area is focused on tourists as opposed to residents  
In your opinion, what makes this stadium an asset to the city  
How has the stadium fit into subsequent redevelopment efforts

### **Developers**

When did your company begin to pursue redevelopment opportunities in the area  
How have you seen the area change  
How have your projects in the area changed  
What are the forces most strongly changing the city  
How does the stadium (or development) fit into the existing built environment  
In your opinion, what makes this stadium an asset to the city  
How do you view working with [city] government

### **Residents**

What has been the biggest change in the area since you arrived  
How has your view of [city's] downtown changed over time  
How do you view the stadium  
How much of the surrounding area is focused on tourists as opposed to residents  
How does the neighborhood differ on days/months with and without games

### **Non Profits**

What has been the biggest change in the area since the stadium  
What role did the stadium play in more recent construction  
How does the stadium (or development) fit into the existing built environment  
What does downtown need moving forward

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